

Figure 1

004E80-82425960

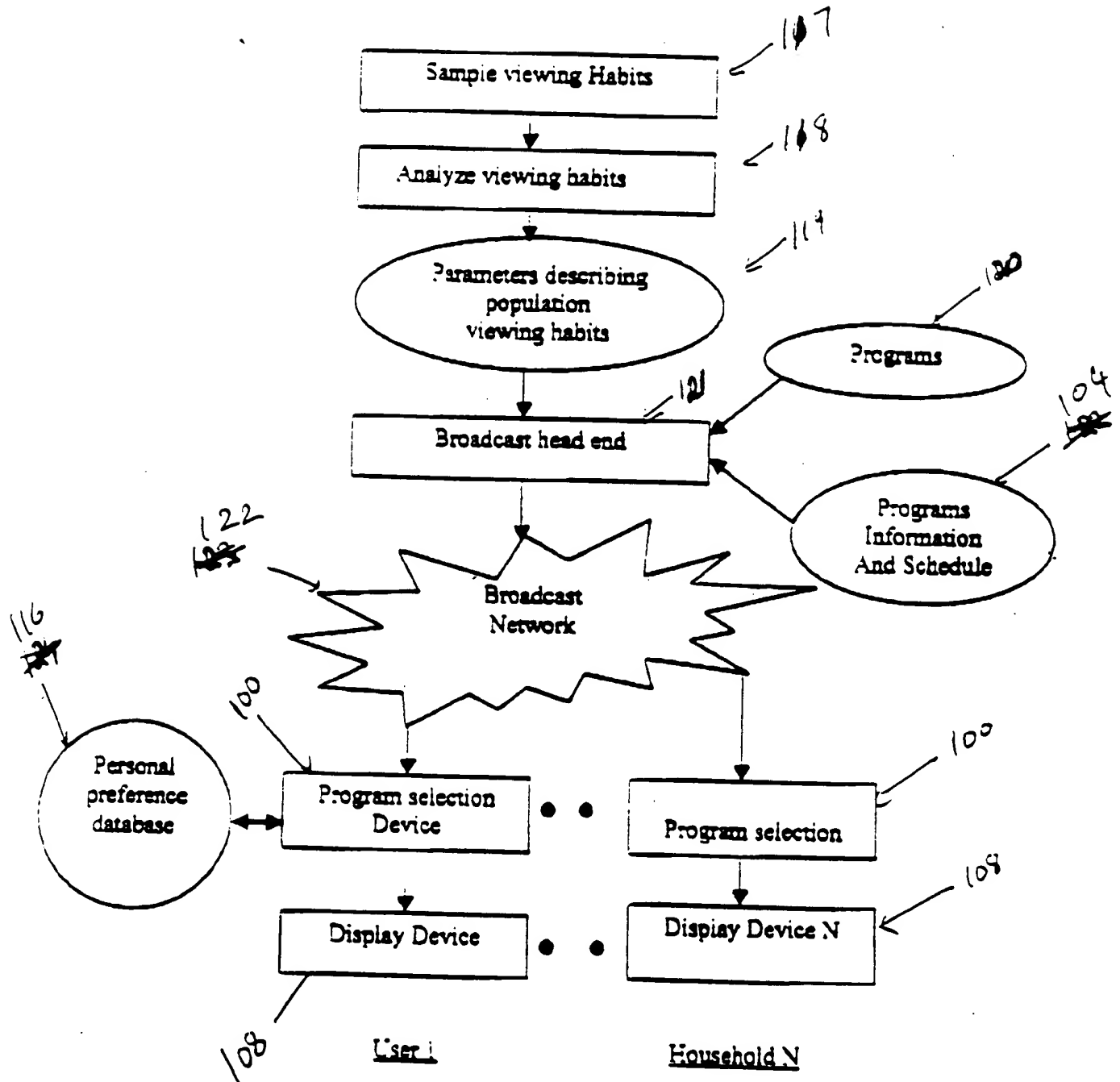


Figure 2

## Examples of Program Information

<p>Title = Seinfeld Program Type = Sitcom Category = Comedy Actors = ( Actor1 , Actor2)</p>	<p>Title = US Debt Report Program Type = News article Category = US Govt. Financial People Mentioned = ( Bill Clinton, Alan Greenspan)</p>
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Example 1

Example 2

Figure 3

001E80-82425960

124

125

Examples for traits

Movie  
Adventure  
Sports  
Mad About You  
dynamic trait 1  
Dynamic trait 2  
NBC NEWS  
FRIDAY Movie  
Premier Mad About You

126

Examples for Liking for viewer N

Movie = 14  
Adventure = 1  
Sports = 0.3  
Mad About You = 5  
dynamic trait 1 = 3  
Dynamic trait 2 = 5  
NBC NEWS = 13  
FRIDAY Movie = 18  
Premier Mad About You = 15

127

Figure 4

001E80 824E5950

001E30 82725950

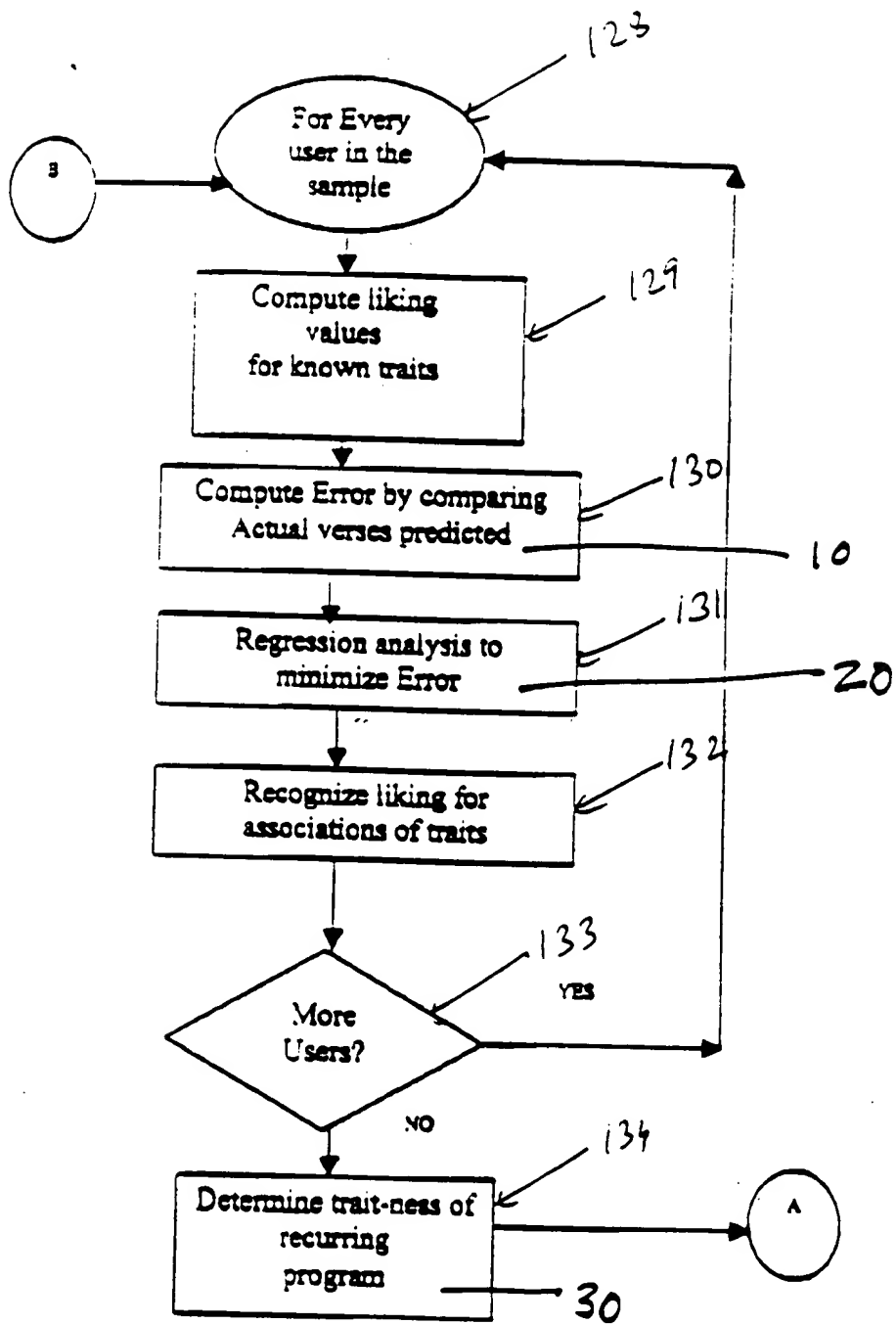


Figure 5(a)

004480-82425950

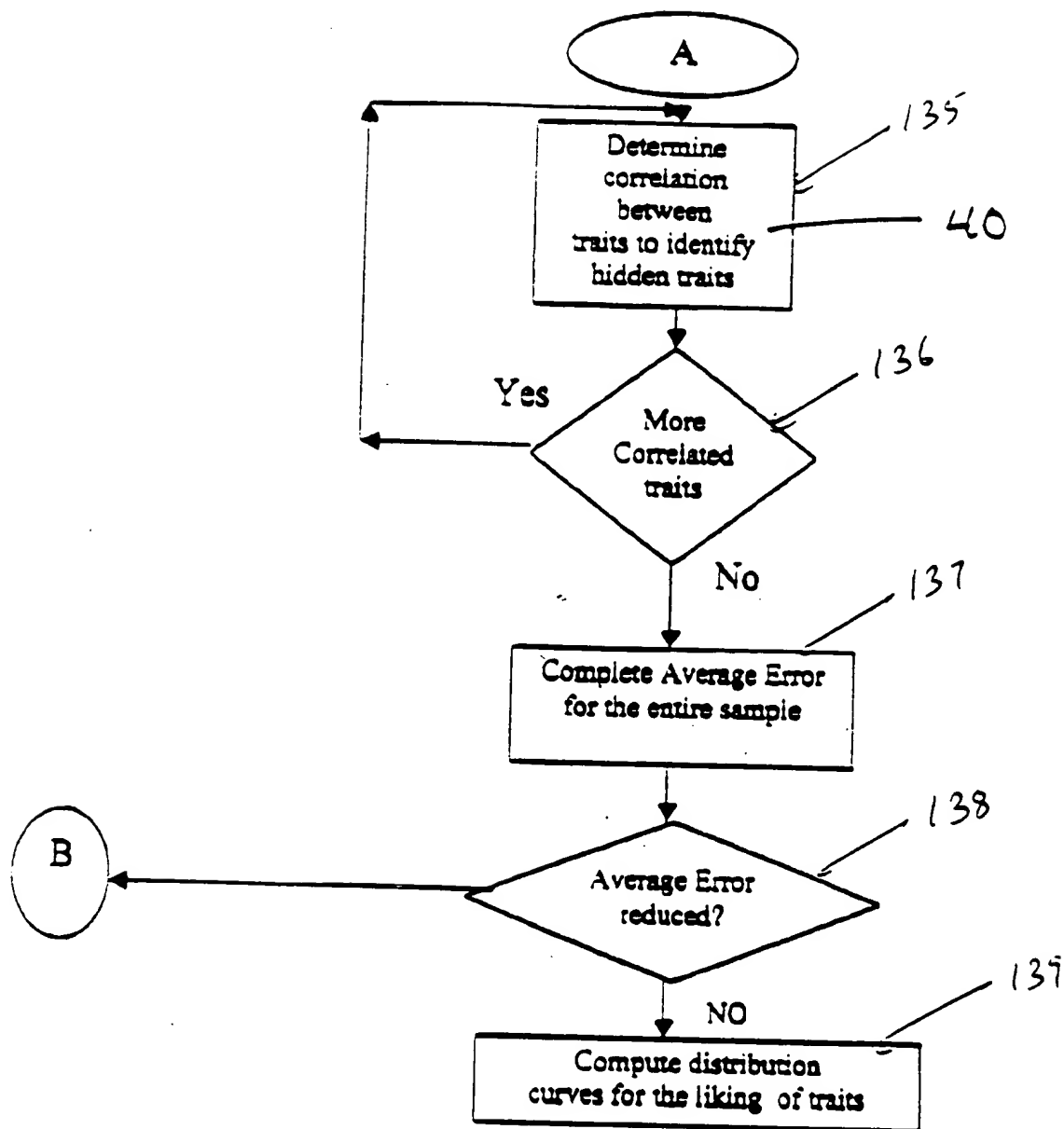


Figure 5(b)

001E80 82725980  
00657478 087100

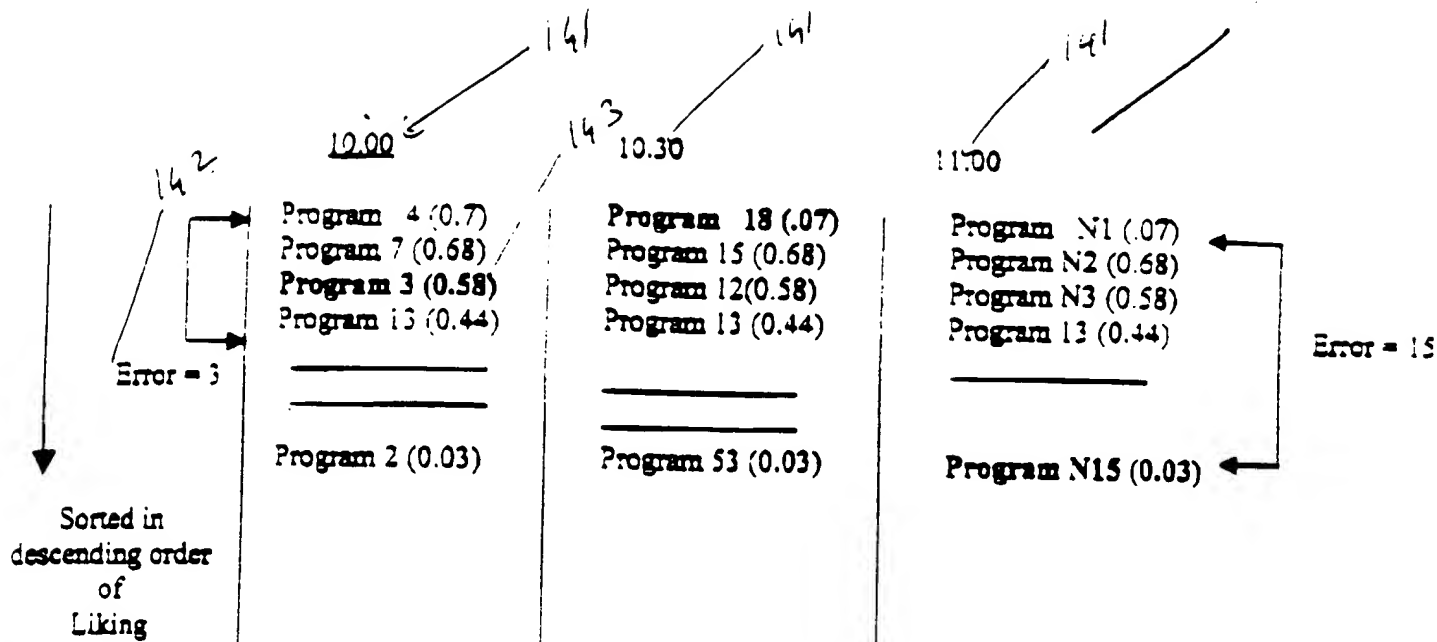


Figure 6

CURRENT LIKING VALUE

$$\begin{aligned} \lambda_{a1} &= 2 \\ \lambda_{b1} &= 5 \\ \lambda_{c1} &= -3 \\ \lambda_{d1} &= 0 \end{aligned} \quad \begin{array}{l} 144 \\ 145 \end{array}$$

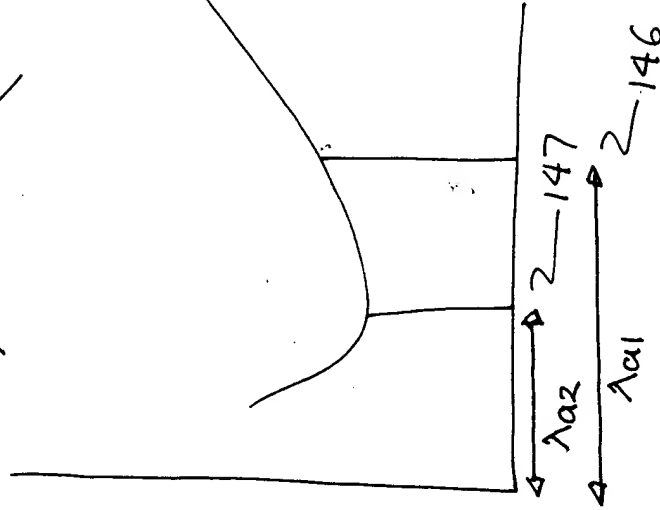
Average  $t_N$

20

148

NEXT LIKING VALUE

$$\begin{aligned} \lambda_{a2} &= 1.5 \\ \lambda_{b1} &= 5 \\ \lambda_{c1} &= -3 \\ \lambda_{d1} &= 0 \end{aligned}$$



$$\lambda_a$$

$$(\lambda_b = \lambda_{b1})$$

$$\lambda_c = \lambda_{c1}$$

$\vdots$

FIGURE 7.



# RECOGNIZING HIDDEN TRAITS IN PROGRAMS

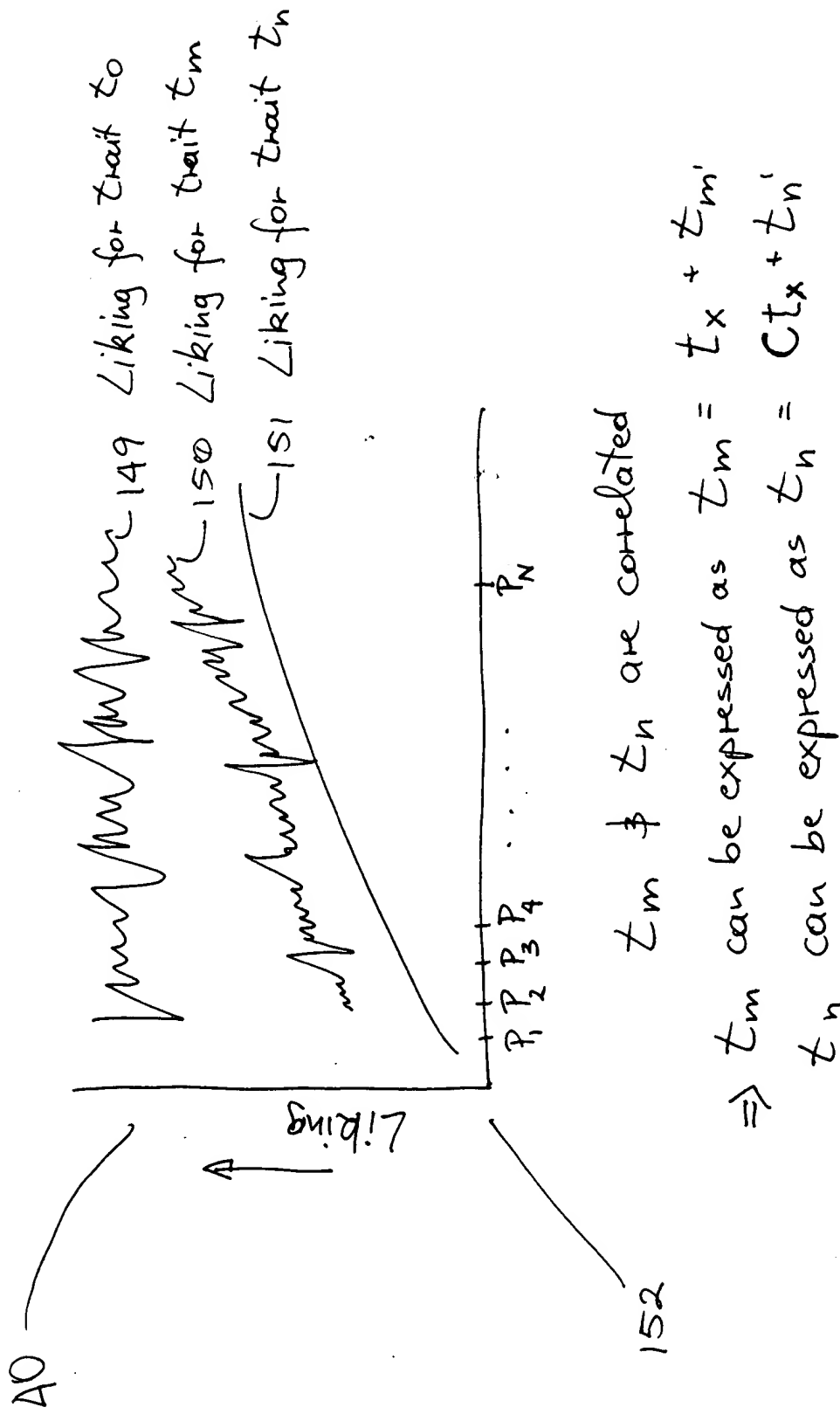


FIGURE 8

Computing Traitness of a trait is a program

30

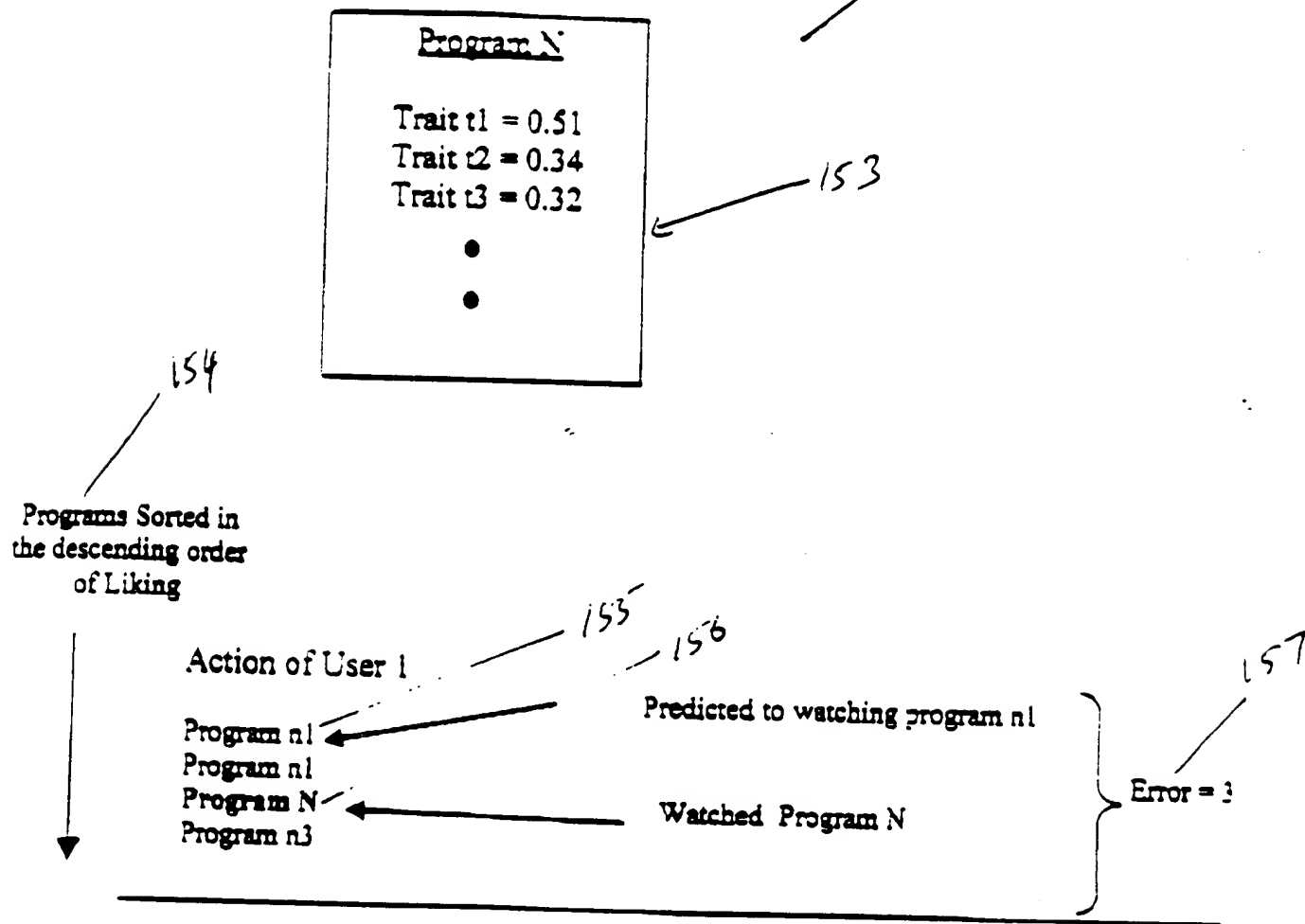
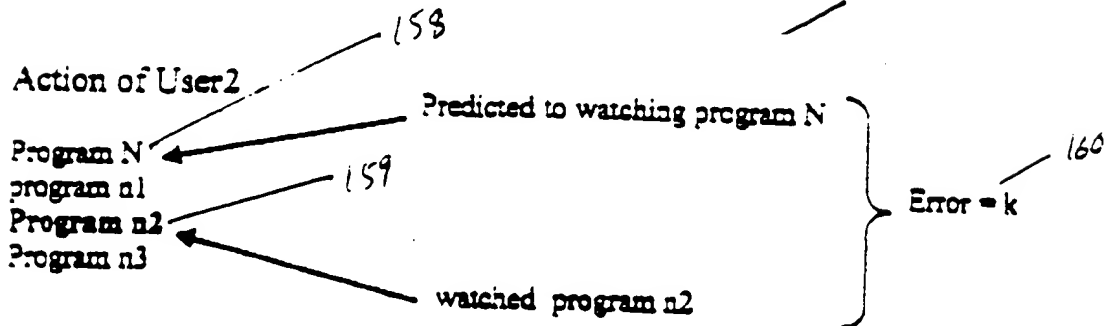


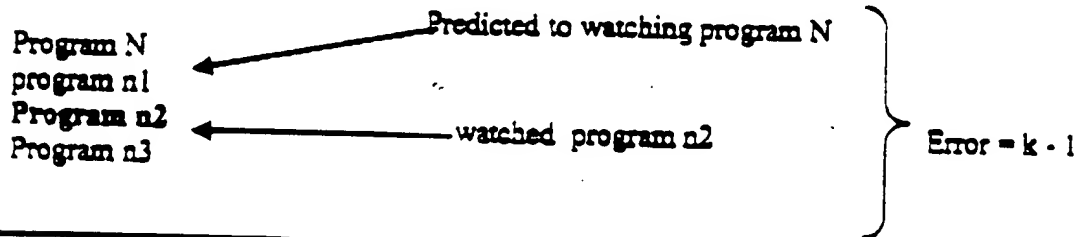
Figure 9(a)

# Computing Traitness of a trait a program

30



## Action of User3



## Action of User4

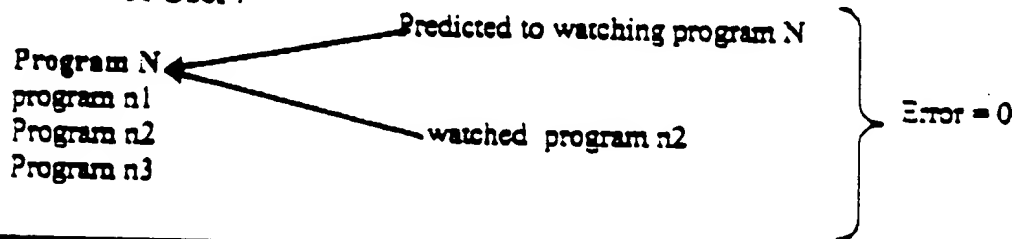


Figure 9(b)

001E30 92425550

# COMPUTING TRAITNESS OF A TRAIT IN A PROGRAM

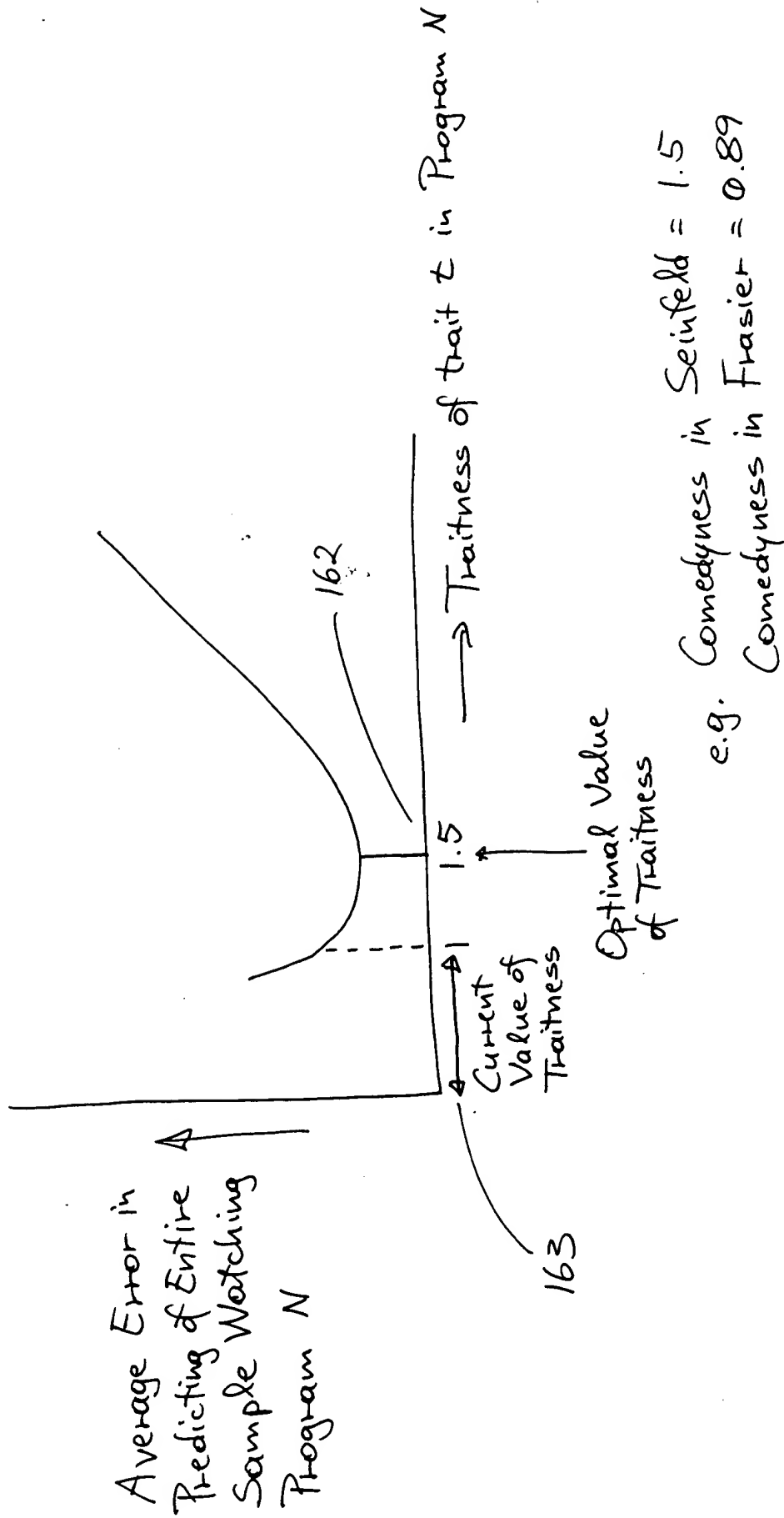


FIGURE 9(c).

Example for Liking Distribution Record format

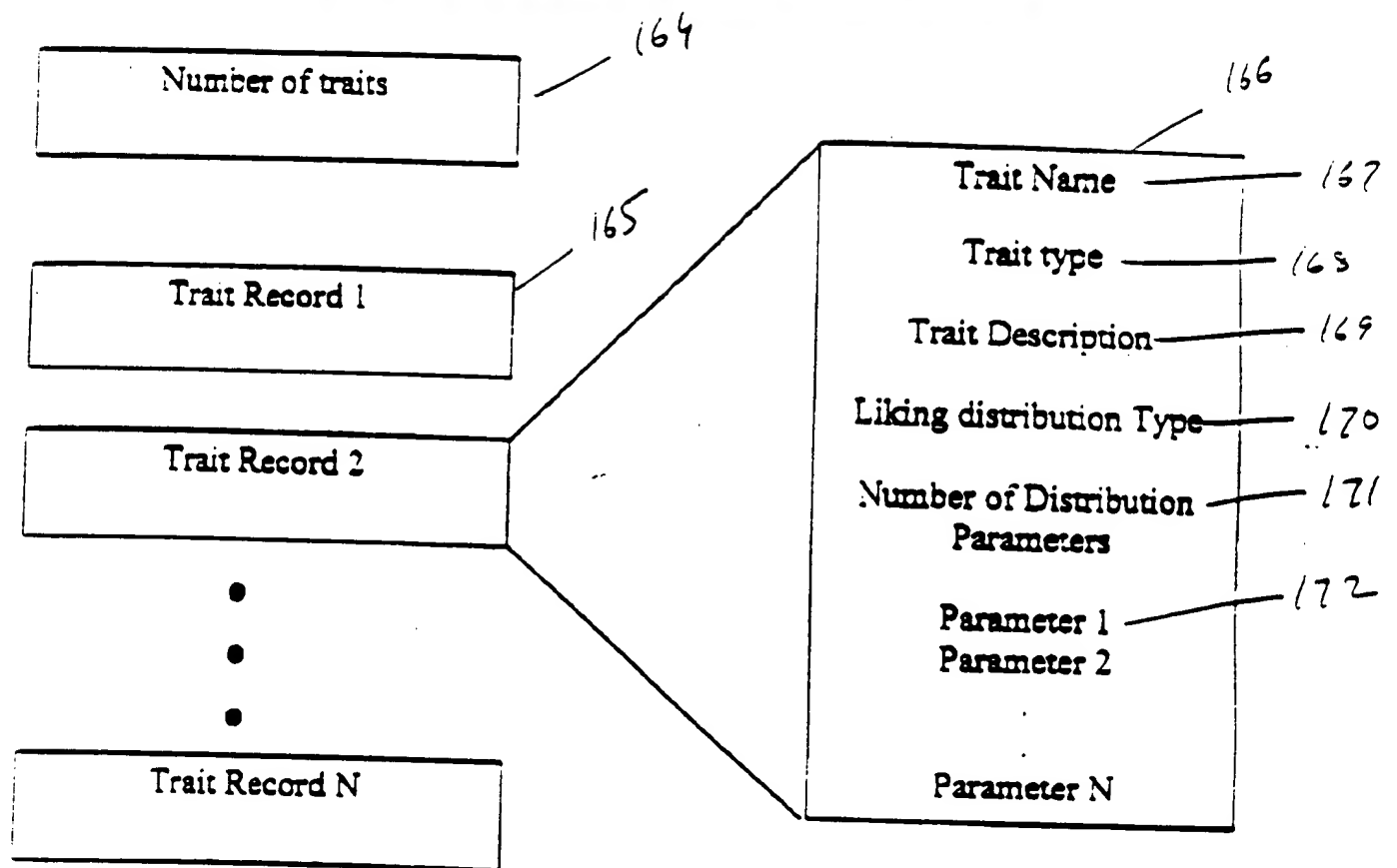


Figure 10

Some Sample Values For Fields in trait Record

Trait type

Static ,  
dynamic  
Association  
Generated

Trait Description

(NBC , "NEWS"),  
SUBSTRING("CIA") IN DESC,  
TITLE

Distribution

Normal  
Exponential  
Defined type 1  
Defined type 2

Distribution Parameters

Mean = 13, Deviation =2

Figure 11

00552478-083400

Example for Traitness of recurring Programs

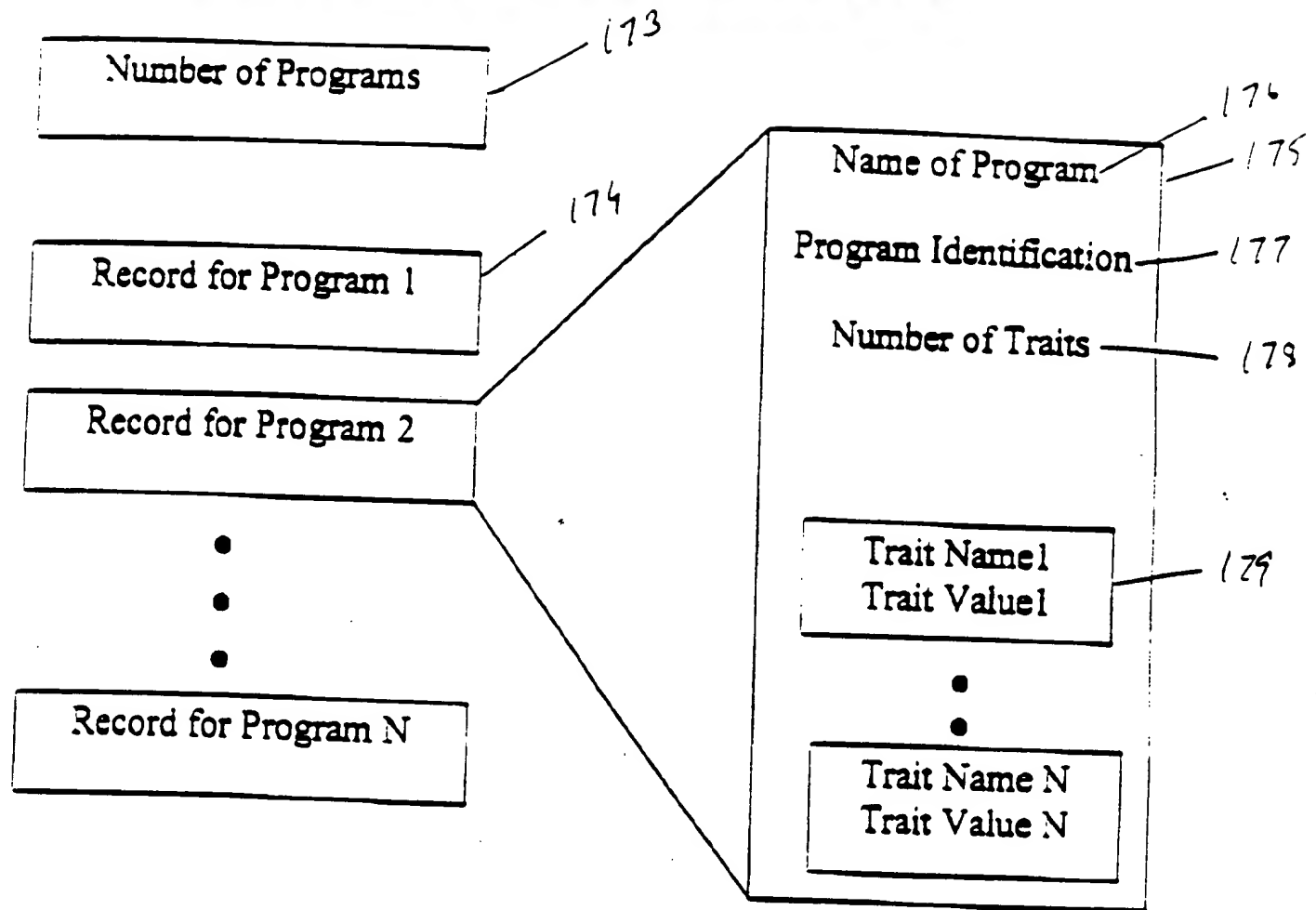


Figure 12

00130-82425960

Example For Broadcasting traitness as a part of EPG Data

Program Info

Seinfeld,

NBC ,

Comedy = 0.07

sitcom ,

Dynamic trait 1 = 0.1

•

•

Actor = Seinfeld

Figure 13

001E80-82429960



## Example for Selection Record

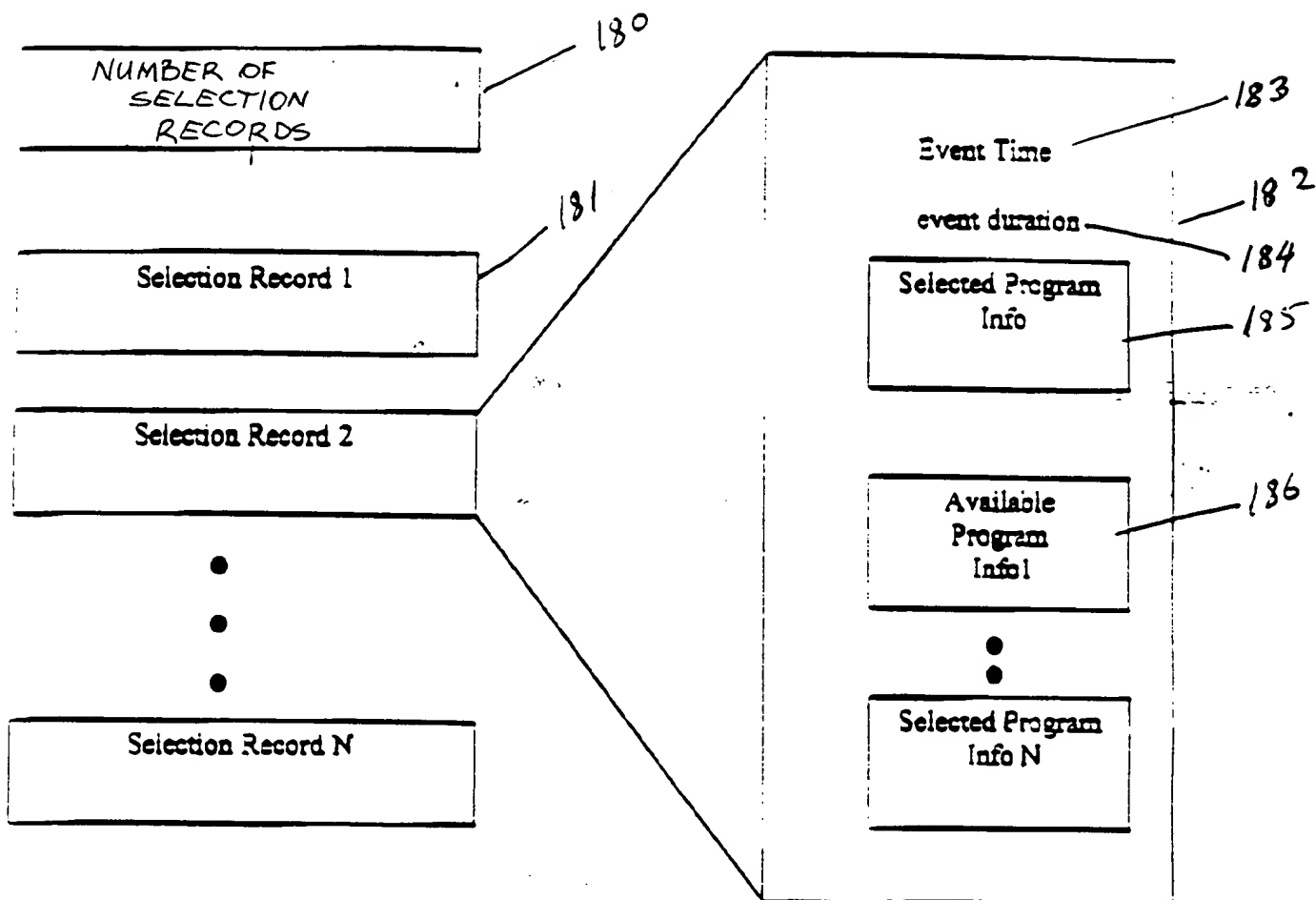


Figure 14

## Generation of User Selection History

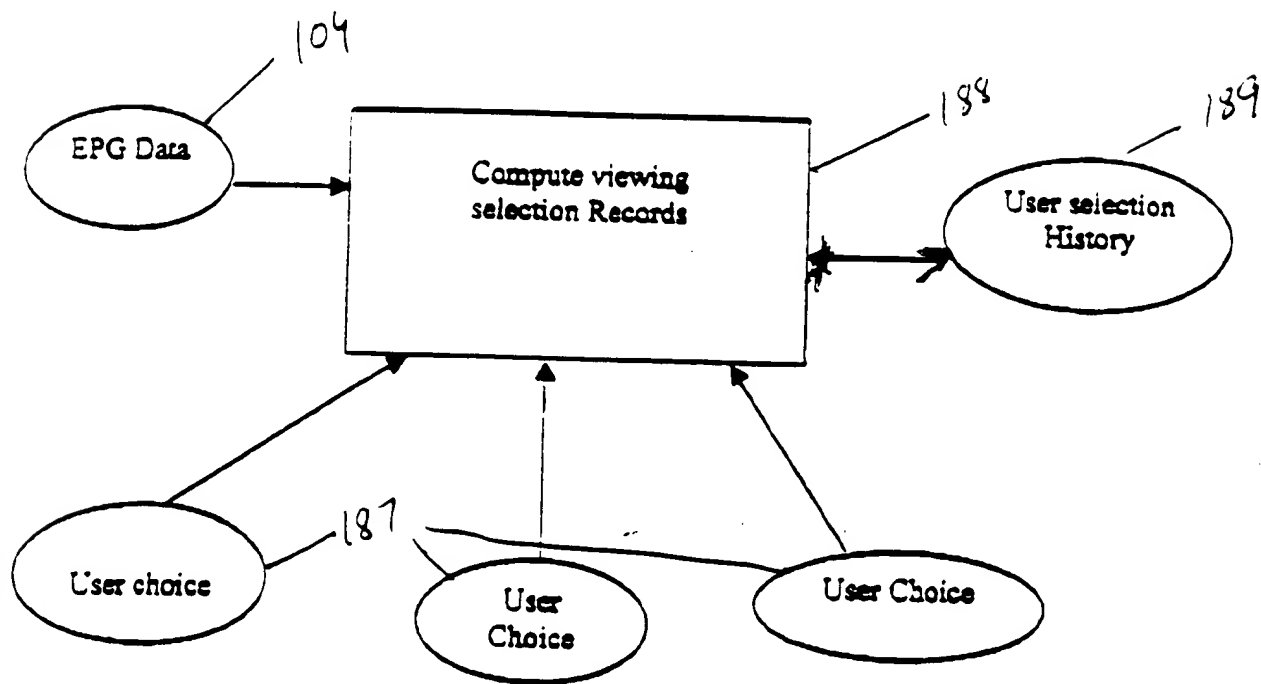


Figure 15

001E80 82425960

# Learning Liking for traits for a given user

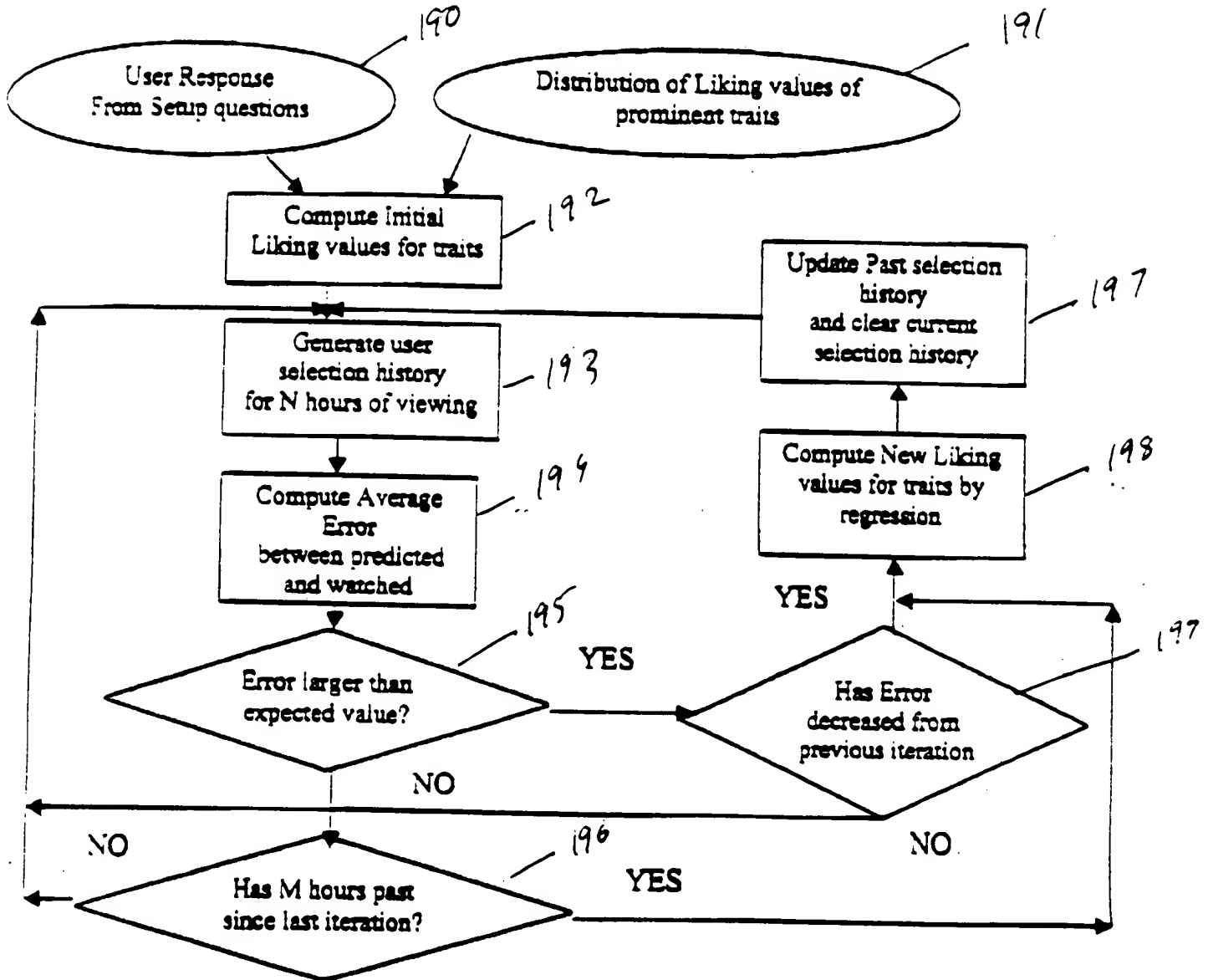


Figure 16

### Computing Relevance

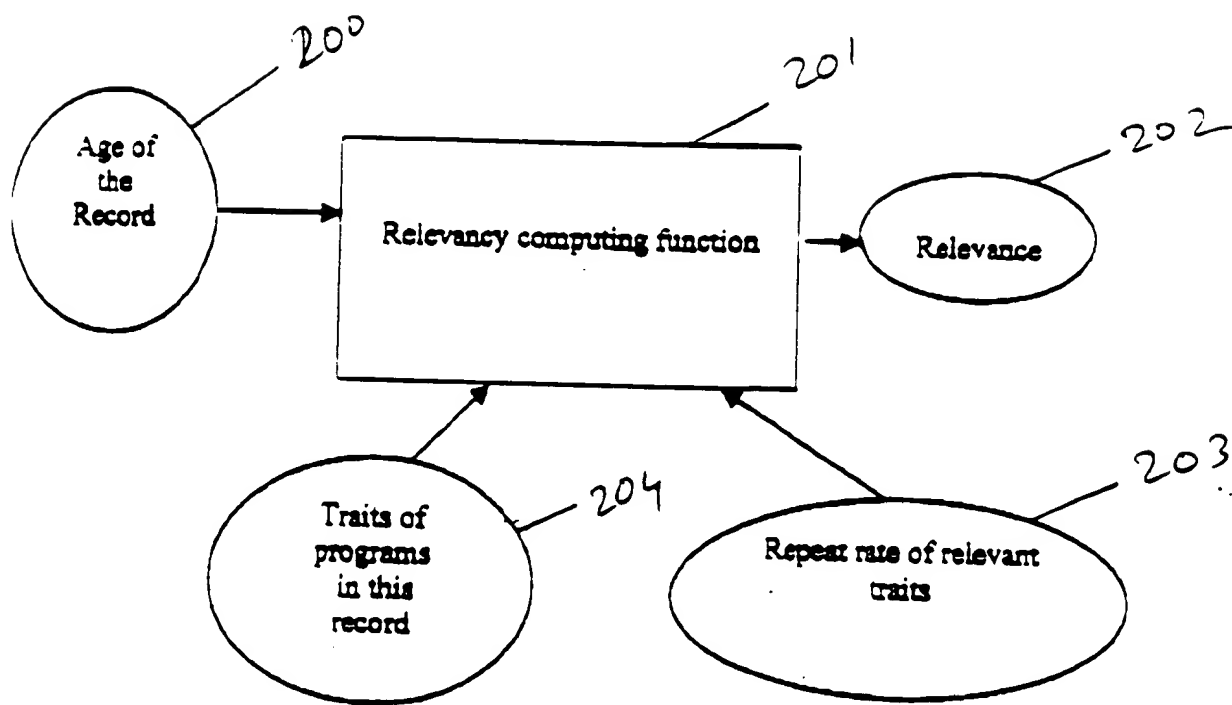


Figure 17 (a)

001E80 82425960

Relevancy

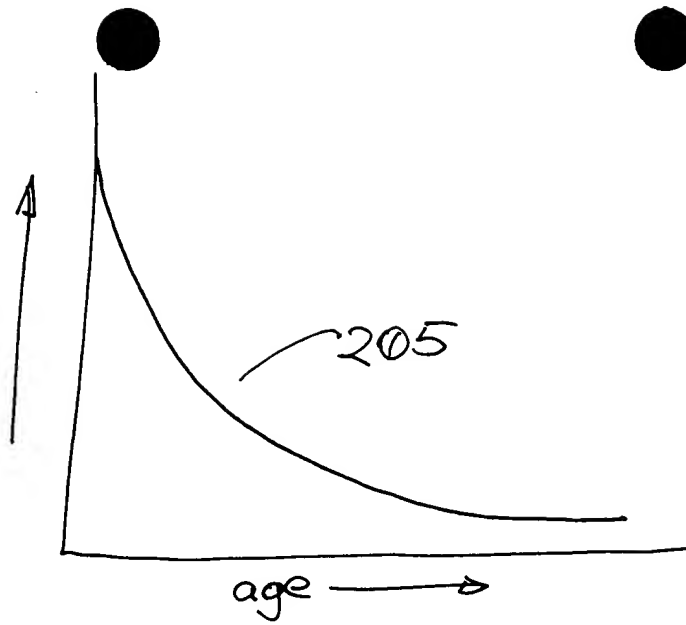


FIGURE 17(b)

Relevancy

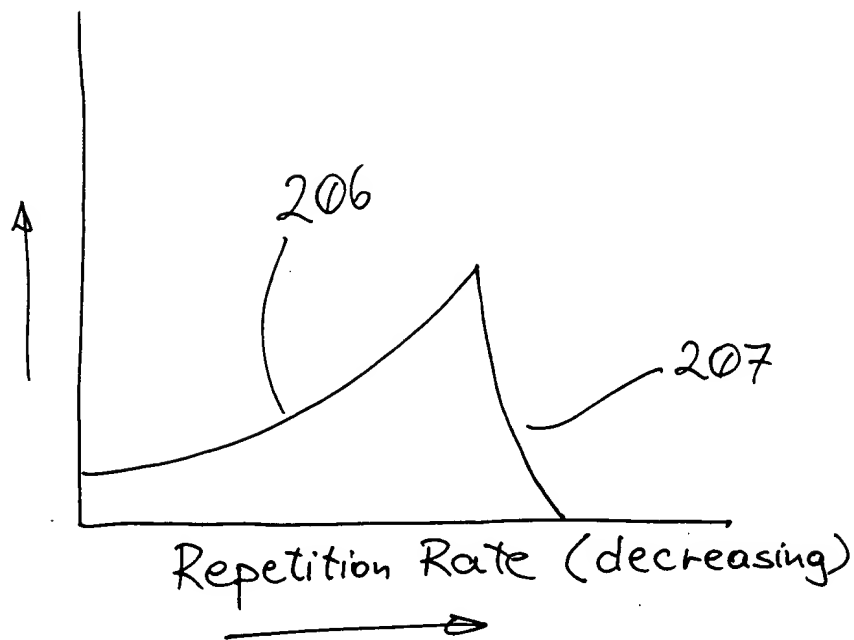


FIGURE 17(c)

0955478-08310  
DOT E80-B/425960

Updation of past History

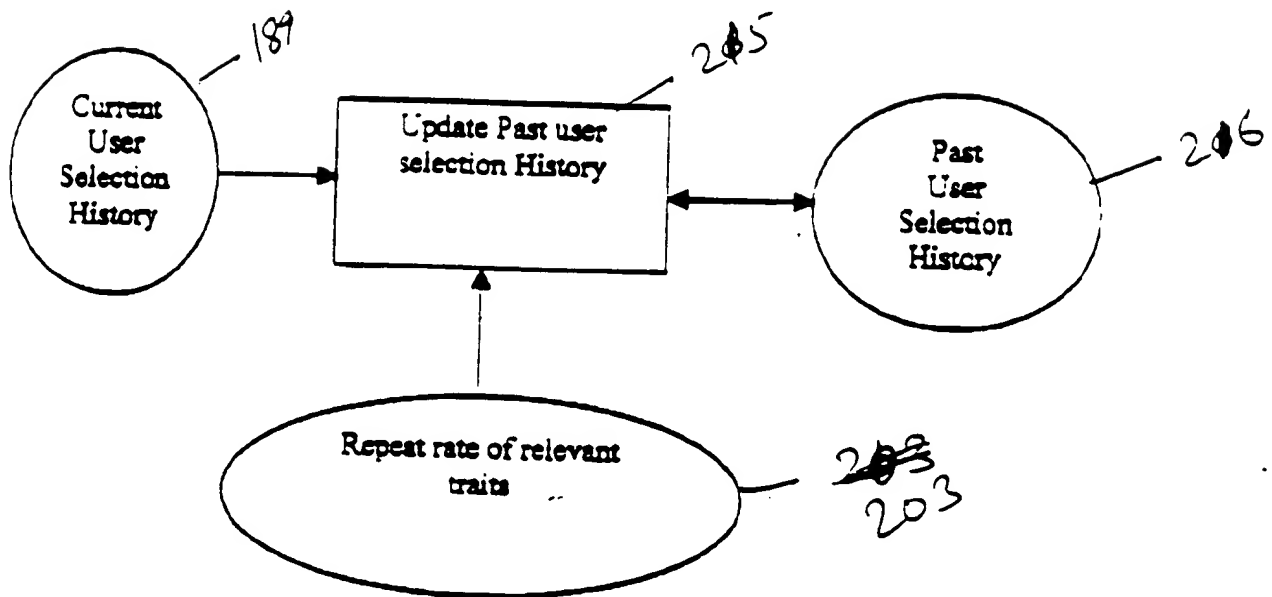


Figure 18(a)

001E80-B2425960

00430 82425950

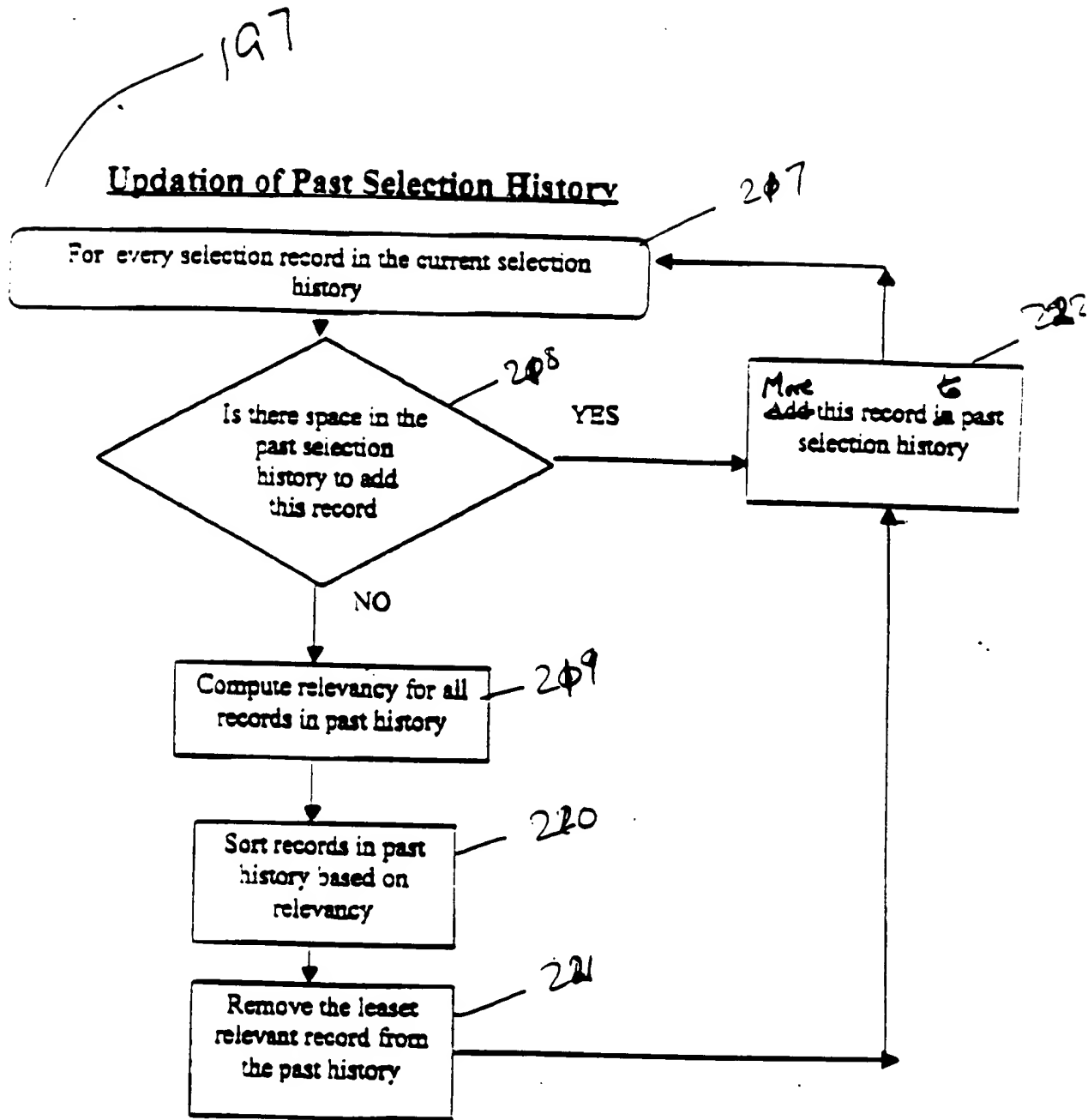


Figure 18(b)

Computing liking on clientside

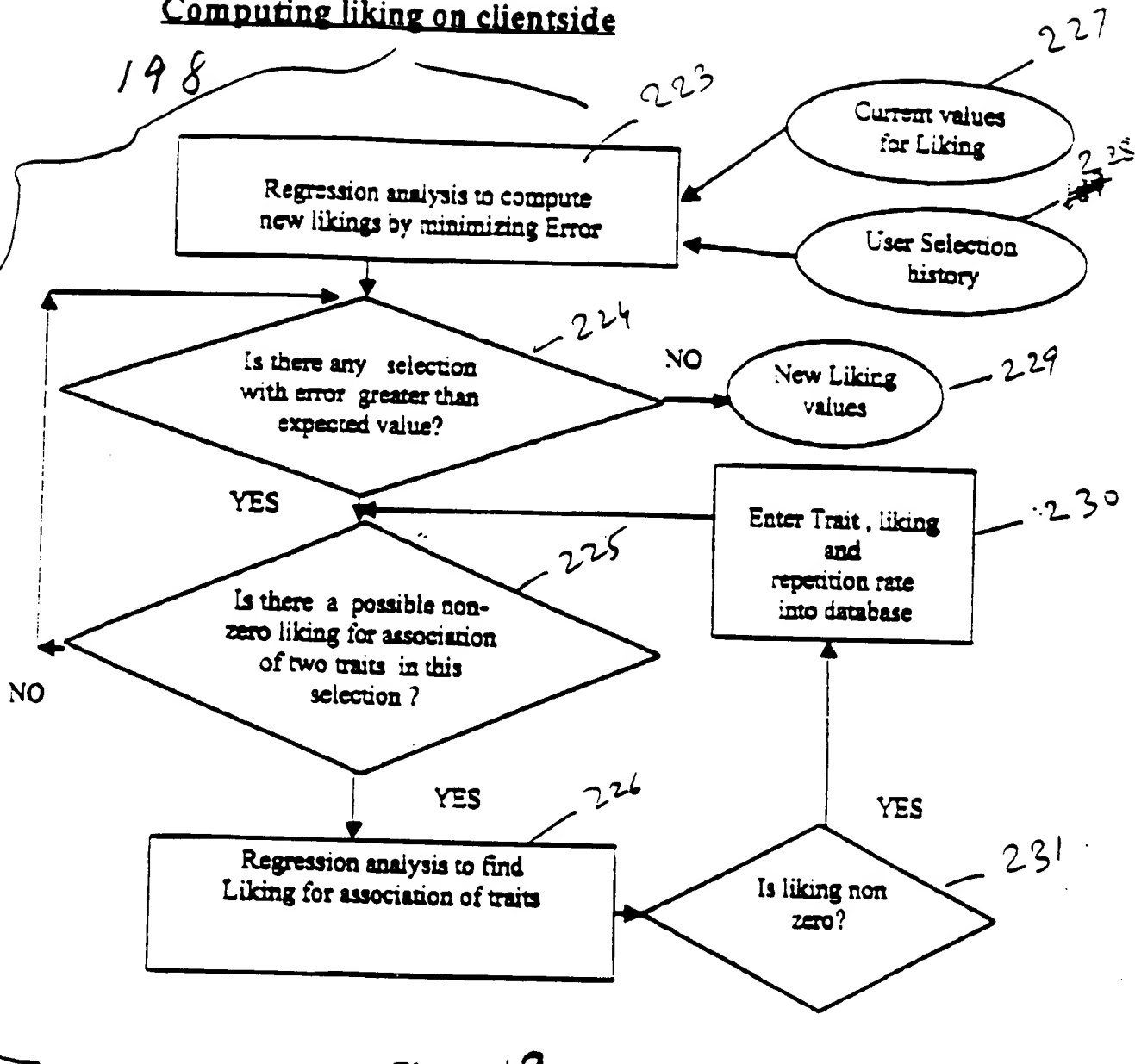


Figure 19



# Computing scores for programs for future prediction

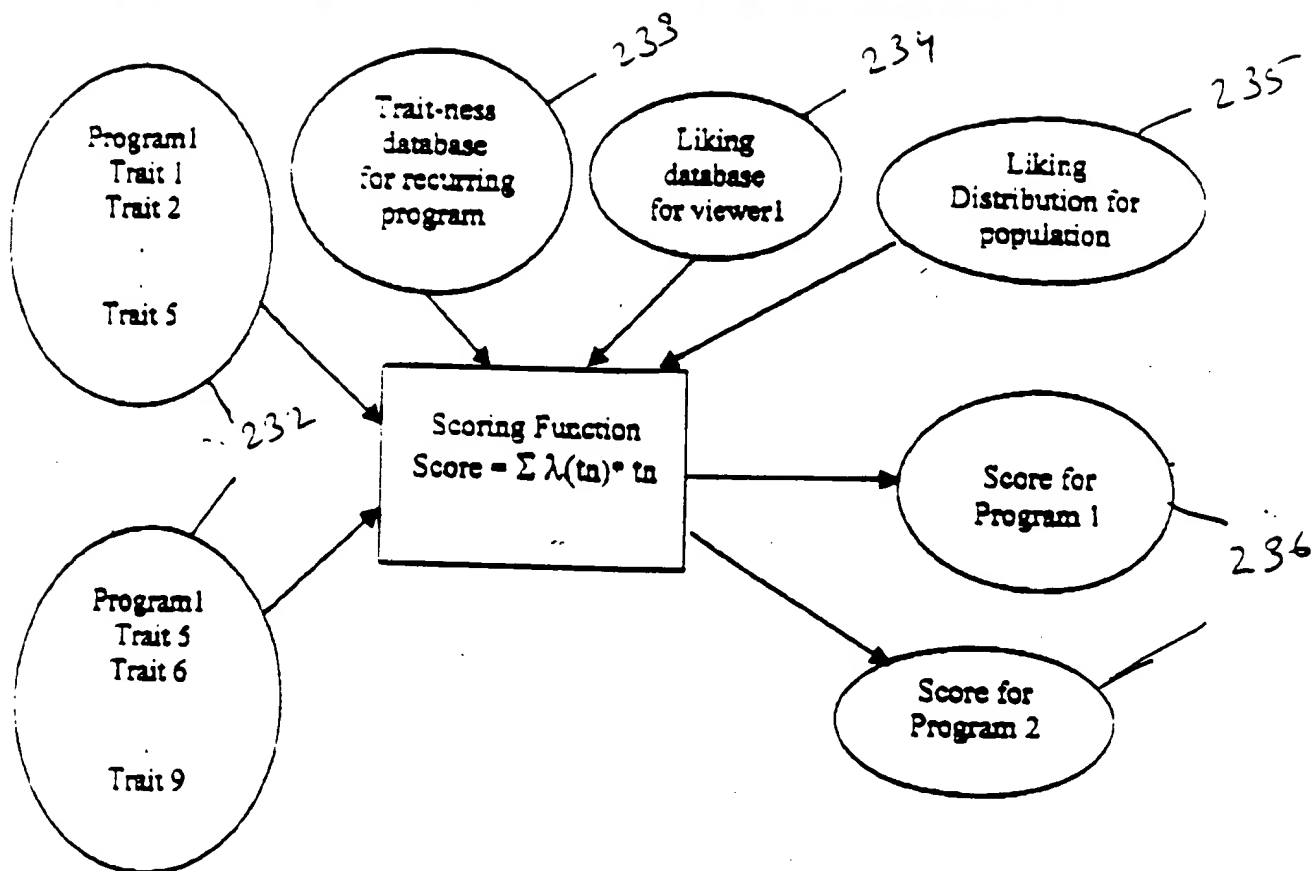


Figure 20

# Distribution of Income in Sample

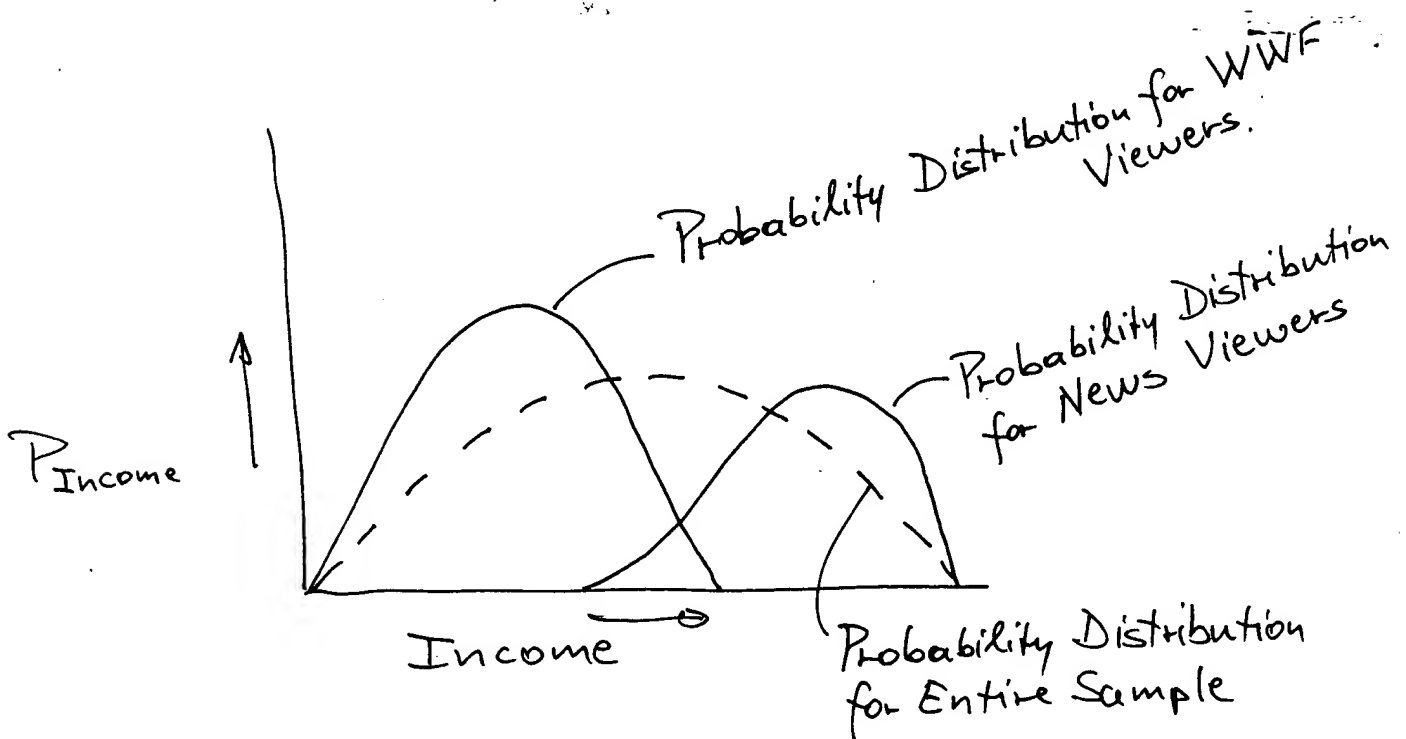
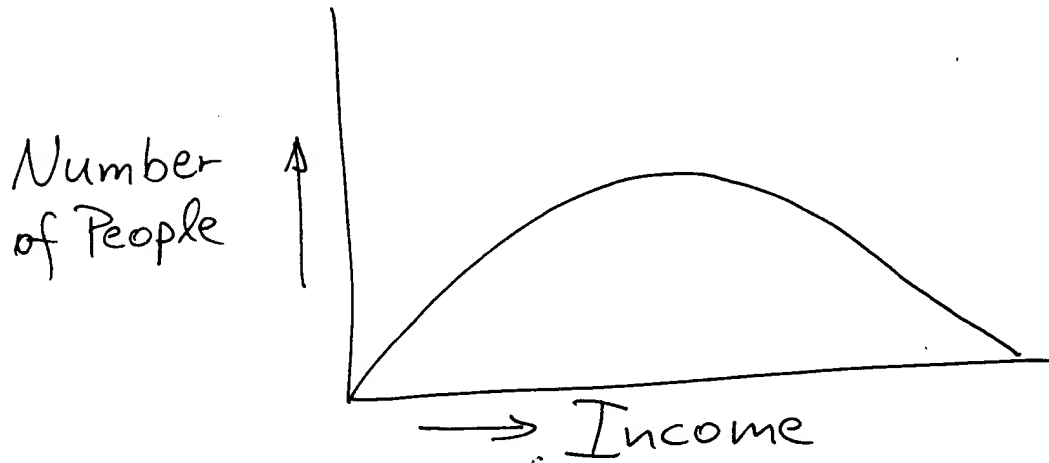
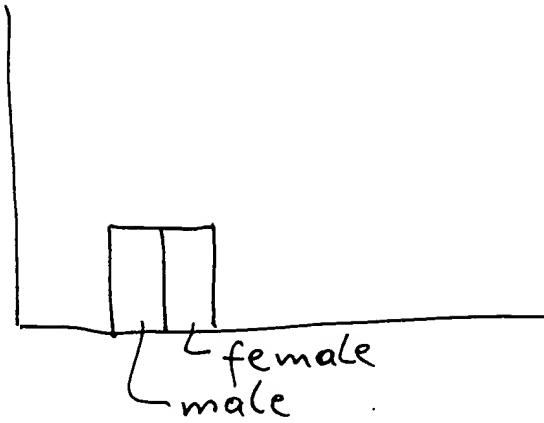
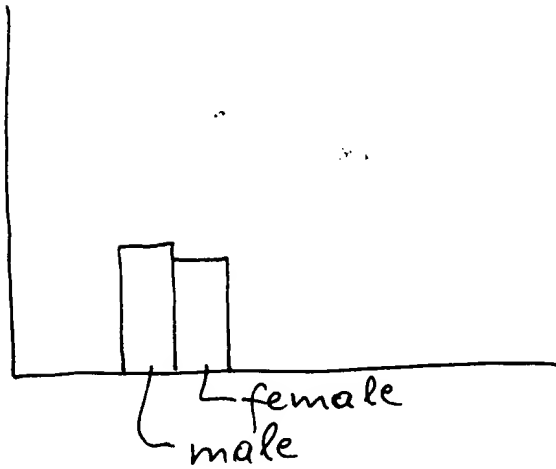


FIGURE 21(a)

P  
Entire  
Sample



P  
Viewers of  
'Seinfeld'



P  
Viewers of  
'Days of Our Lives'

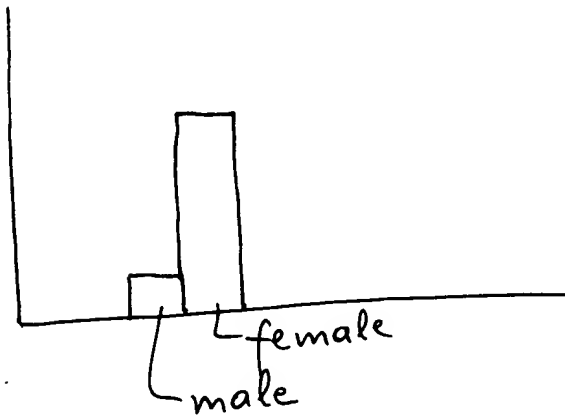


FIGURE 21 (b)

# SYSTEM ARCHITECTURE

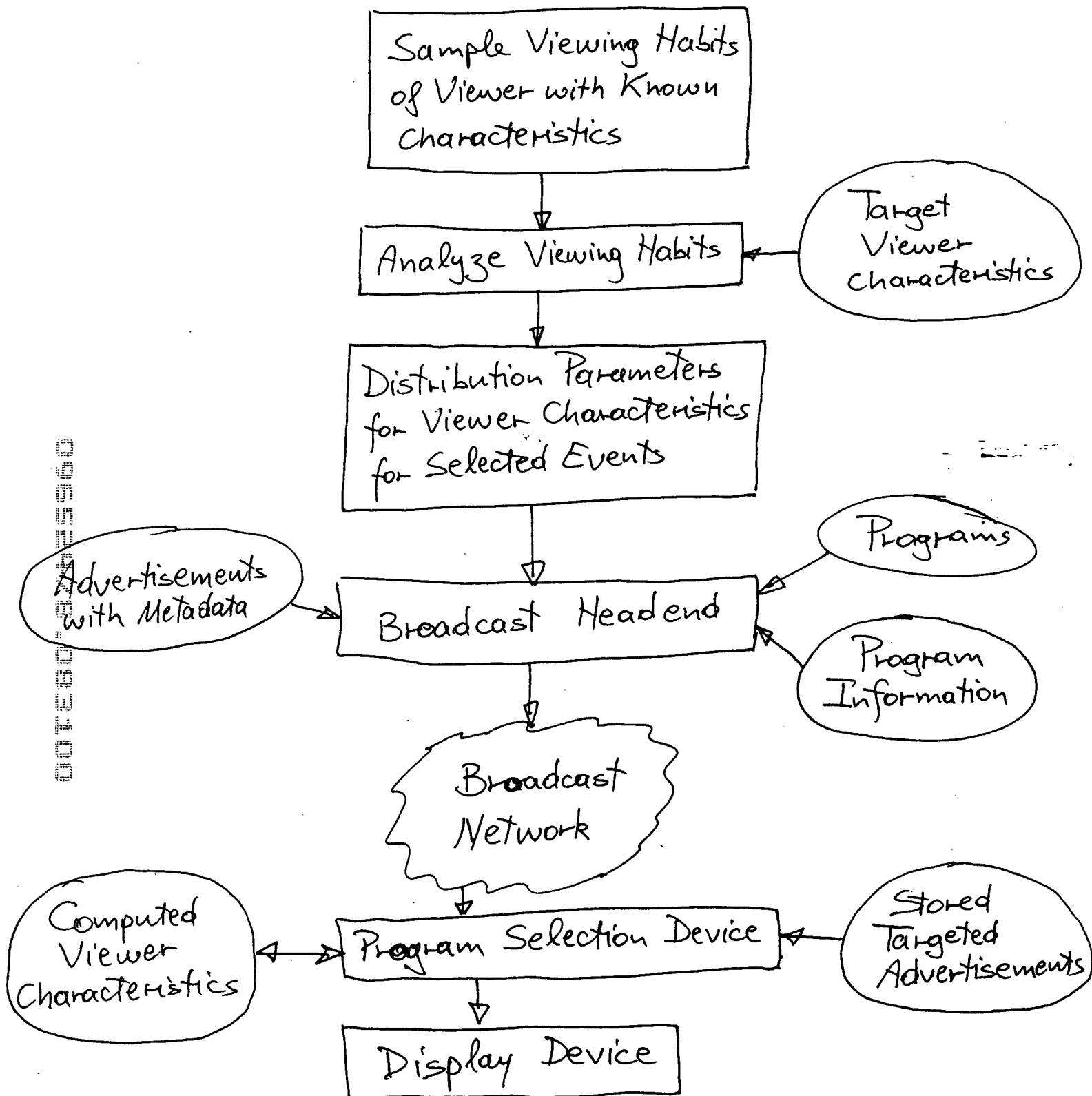


FIGURE 22

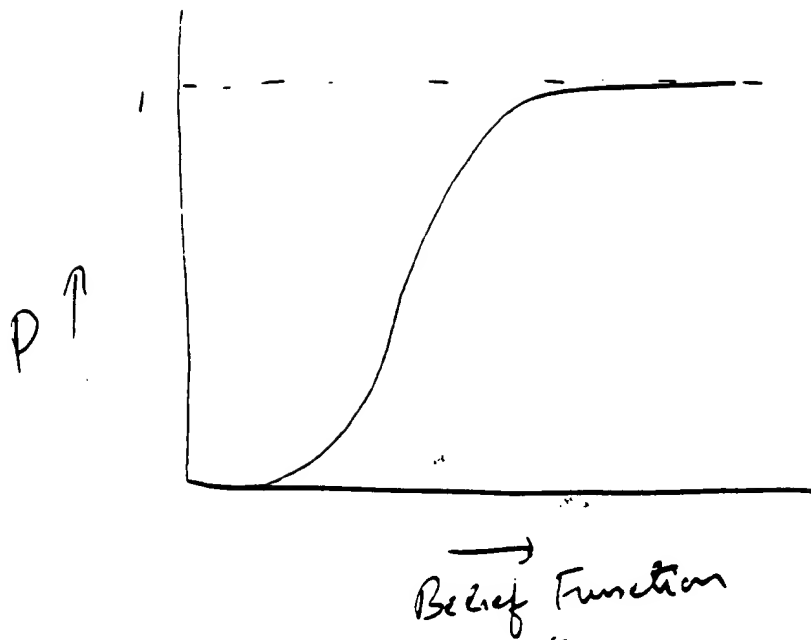


Figure 23a

## Demographic Trait Record format

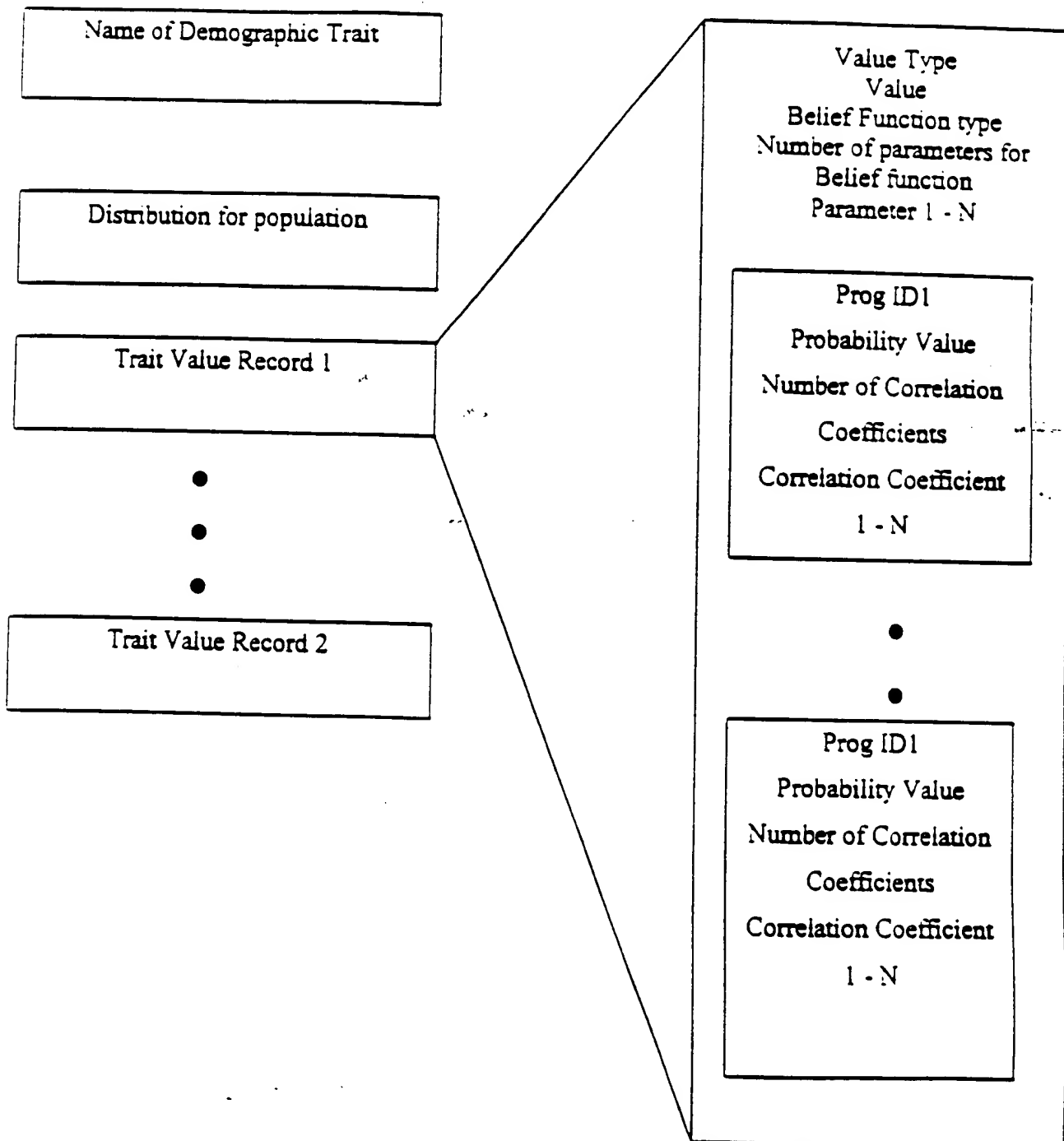


Figure 23b

# Advertisement Targeting Record format

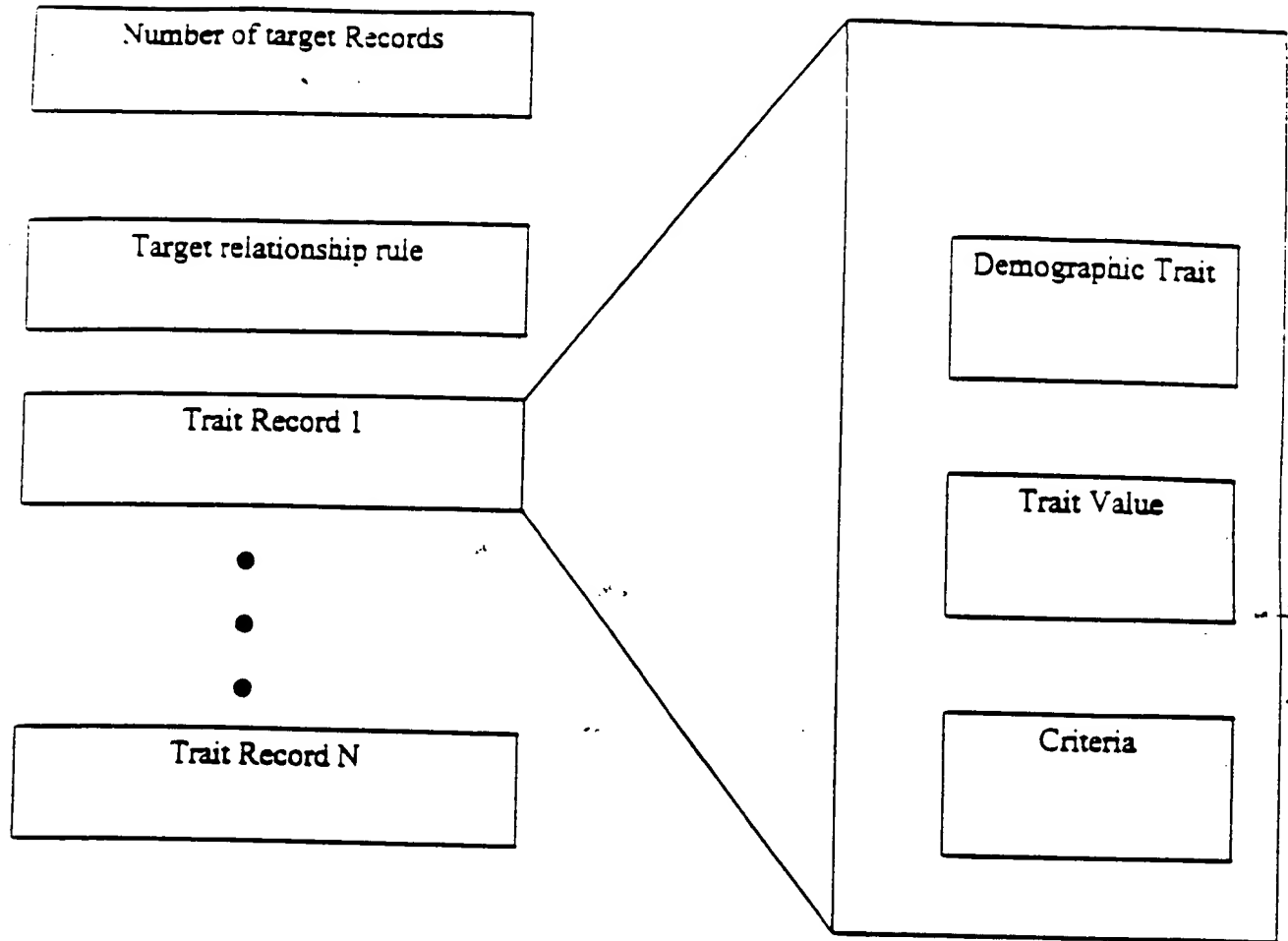


Figure 23a

001E80 824E5960

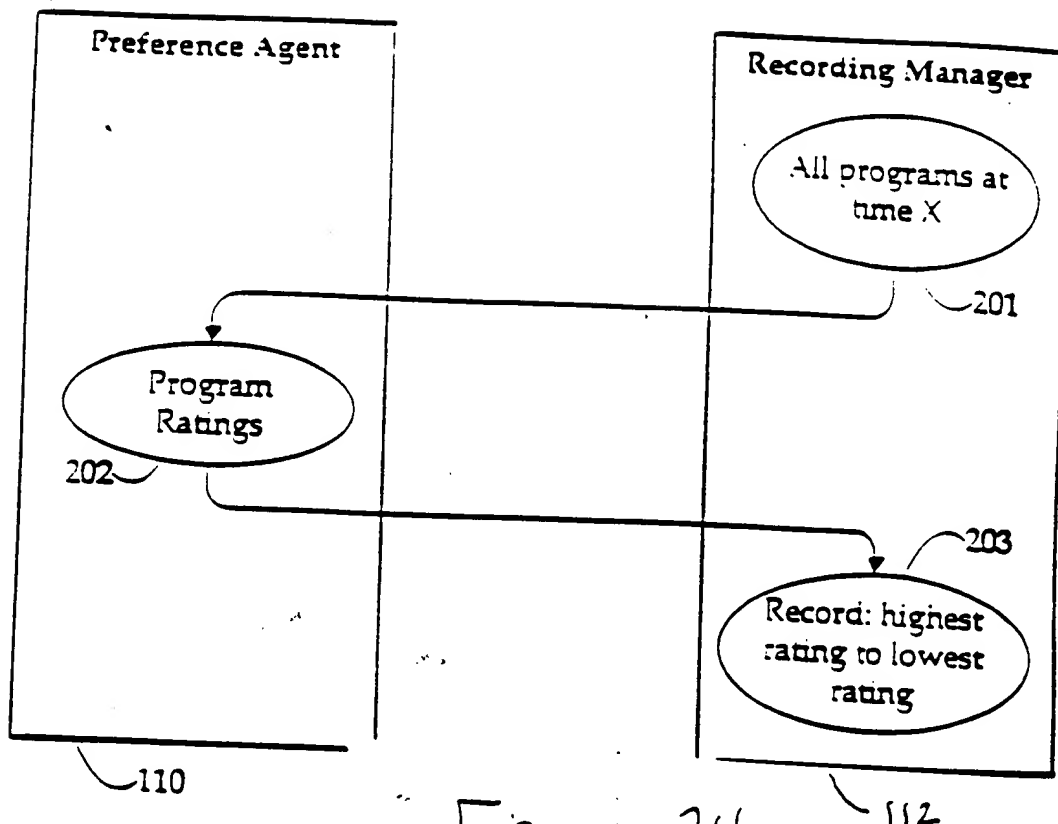


Figure 24

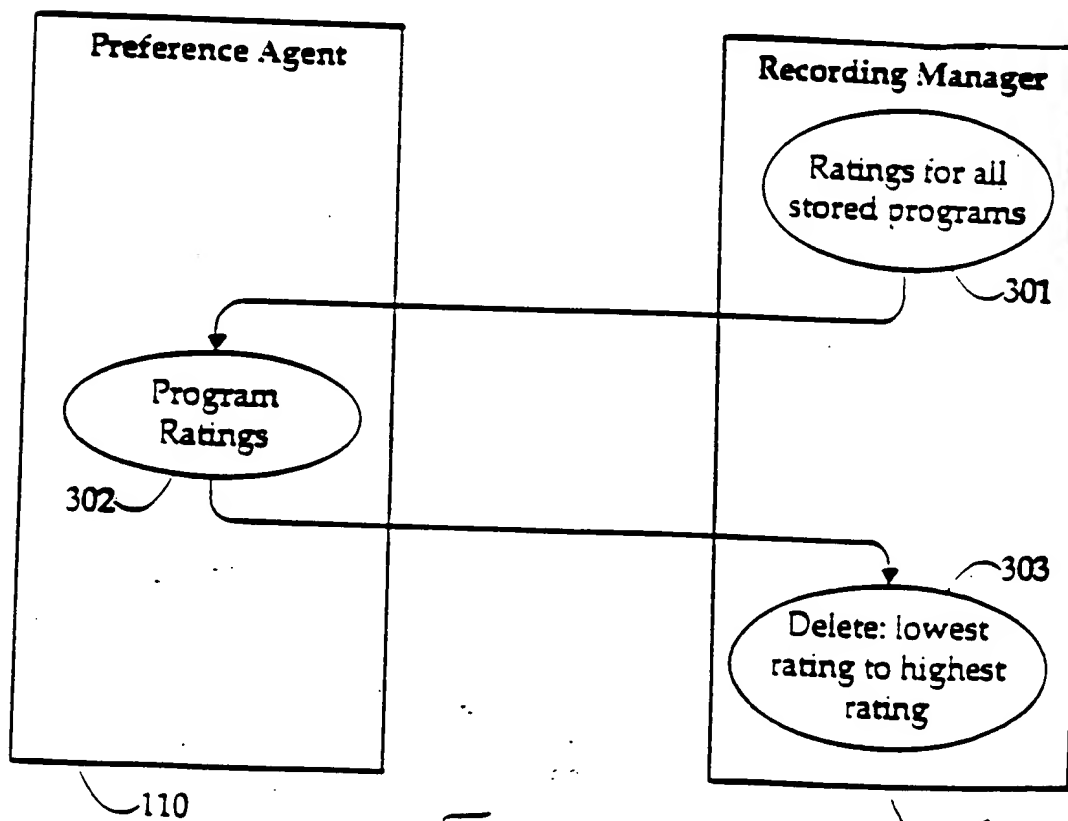


Figure 25



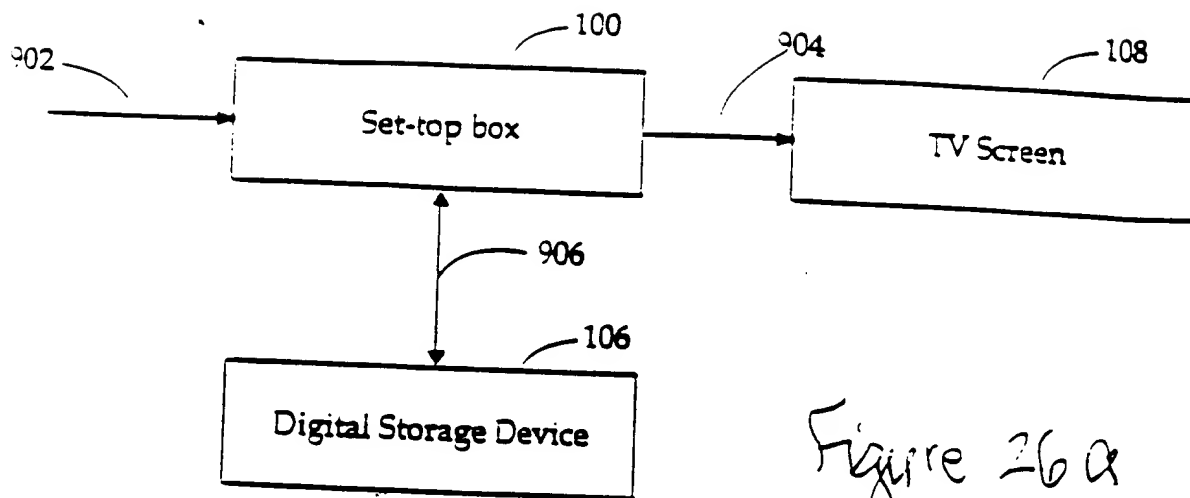


Figure 26a

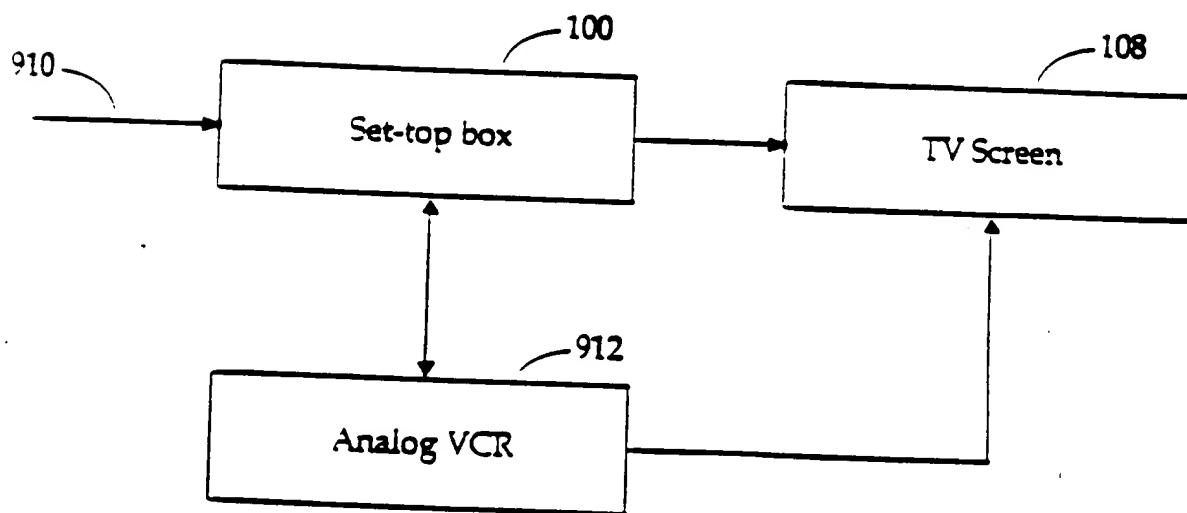


Figure 26b

001E90-32125960

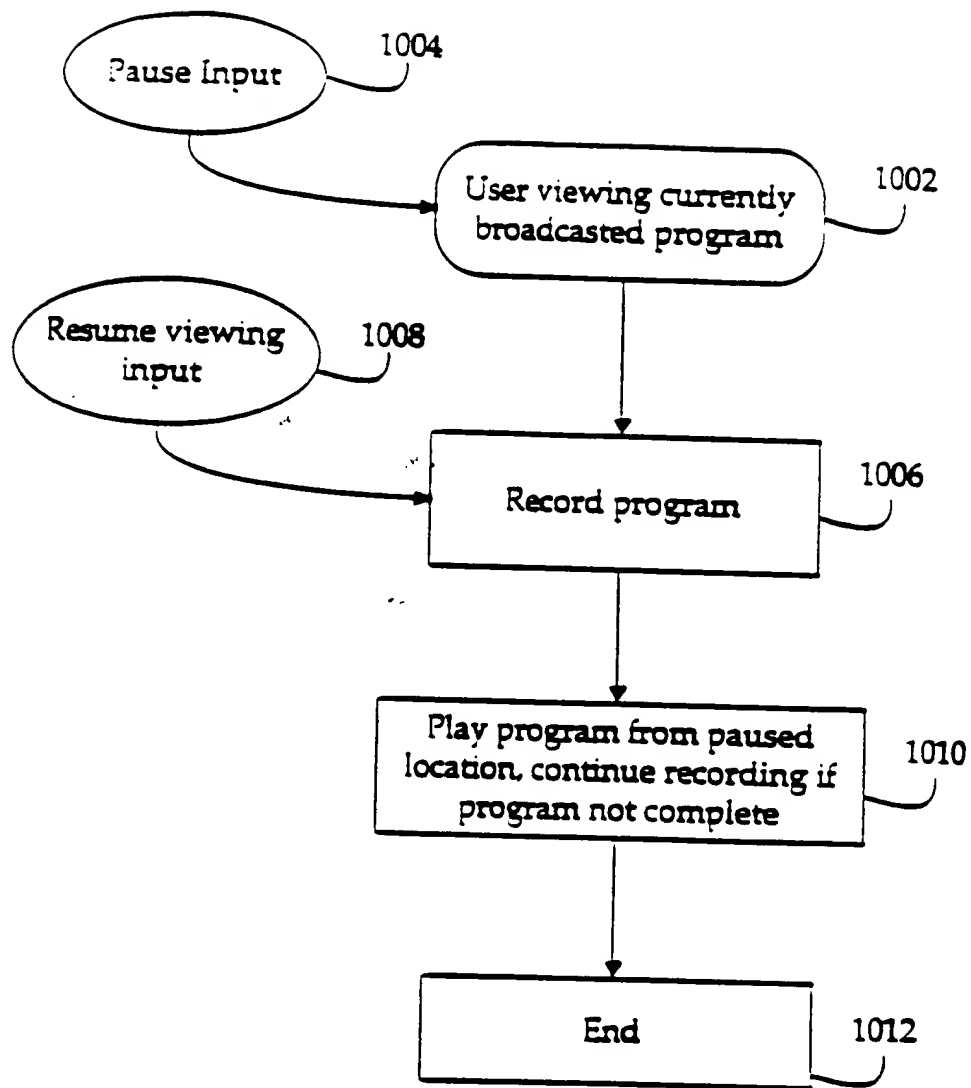


Figure 27

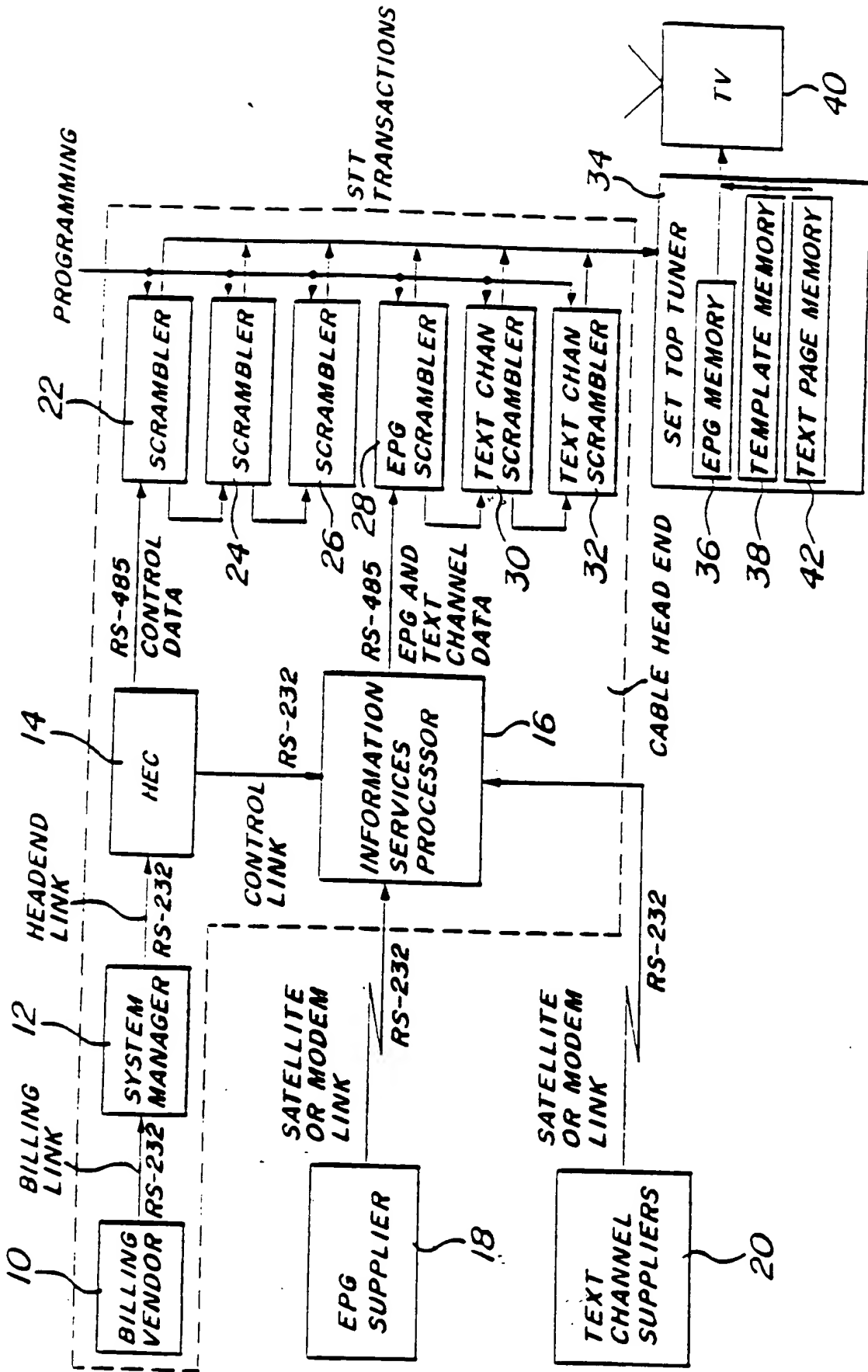


Figure 28

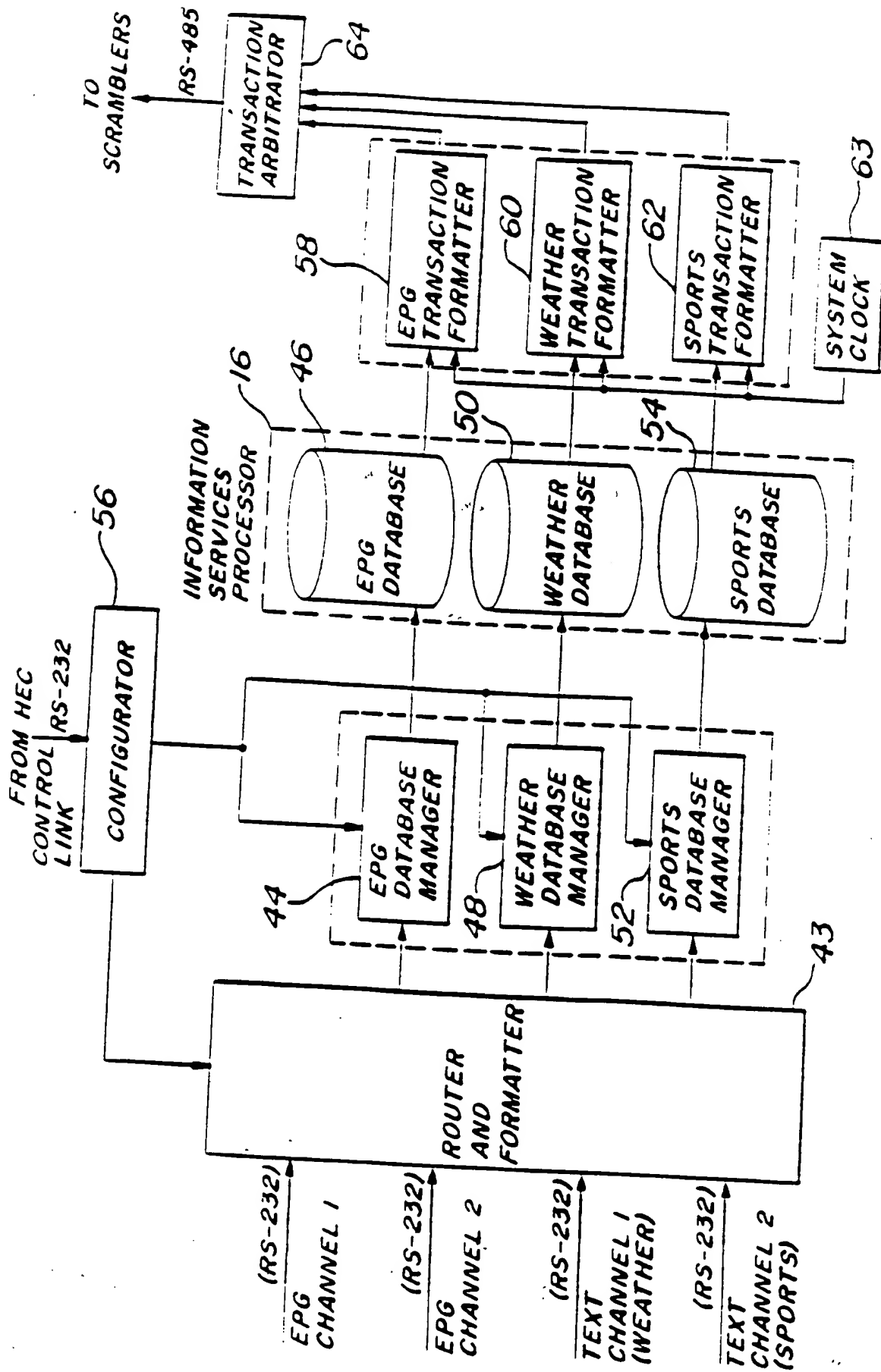
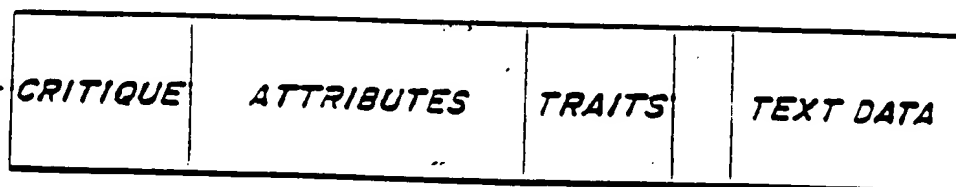


Figure 29

(INFORMATION FIELD)



RECORD KEY



COMPRESSED

Figure 30

(TO SCRAMBLERS)

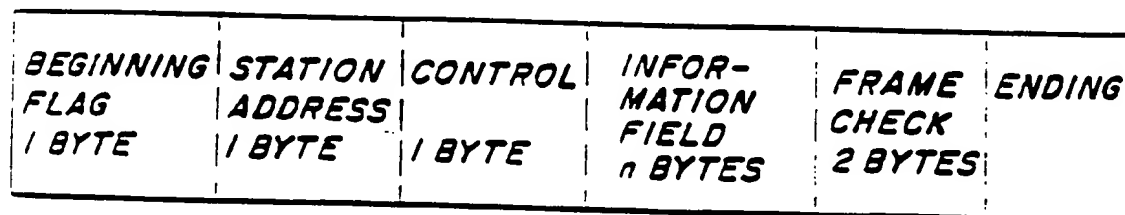


Figure 31

00450 2425560

EPG TRANSACTION FORMATTER 58

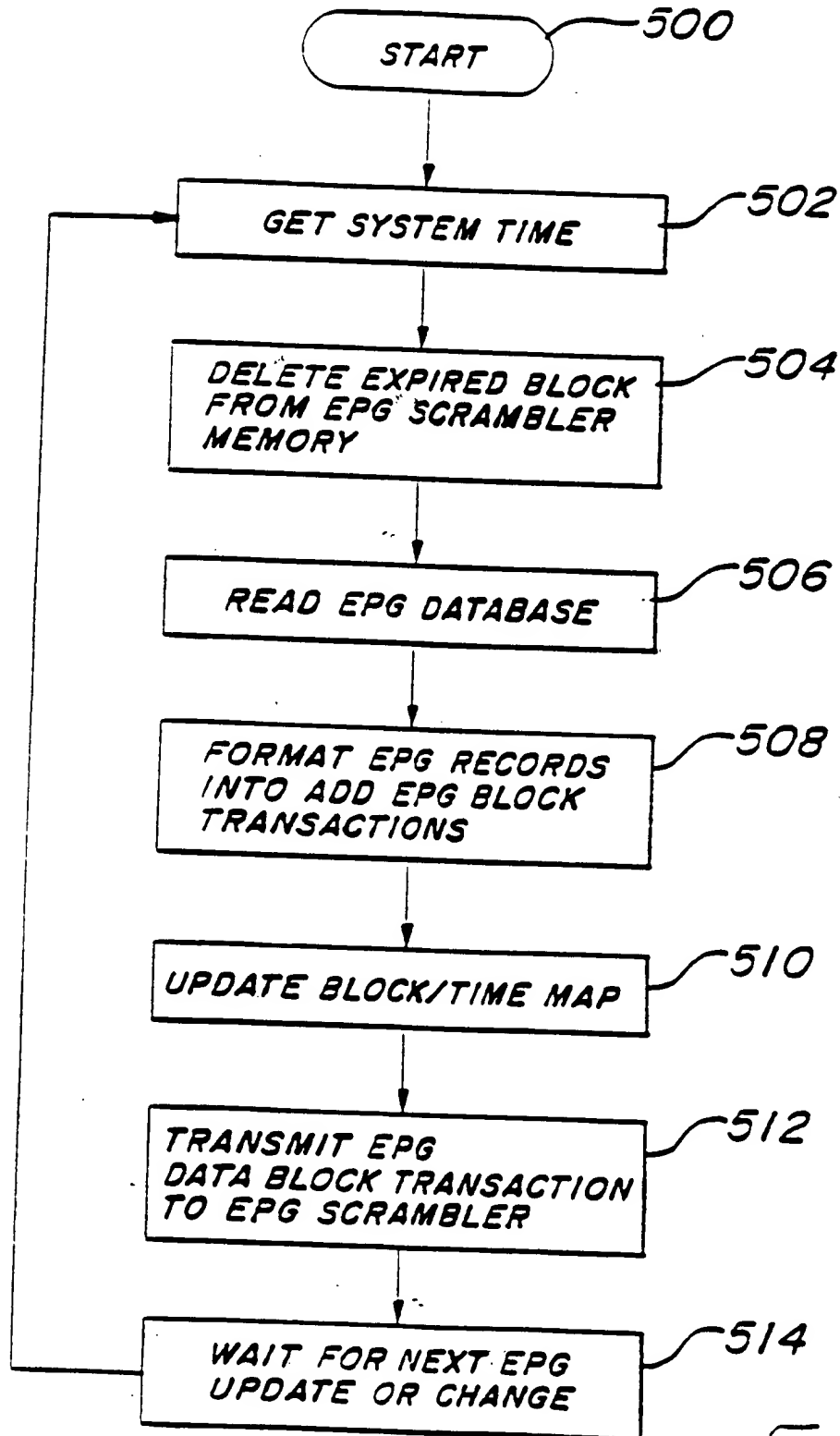


Figure 31

001E80-8/425960

TEXT CHANNEL TRANSACTION FORMATTER 60,62

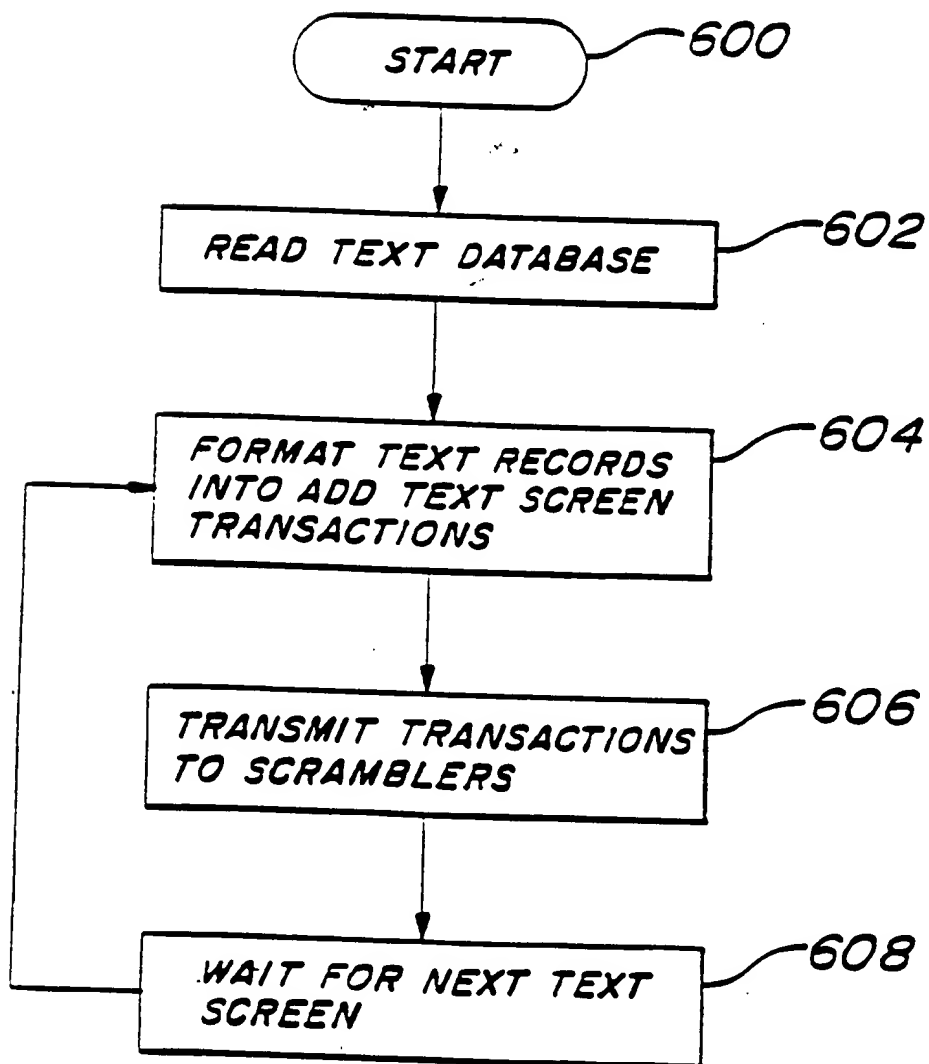


Figure 33

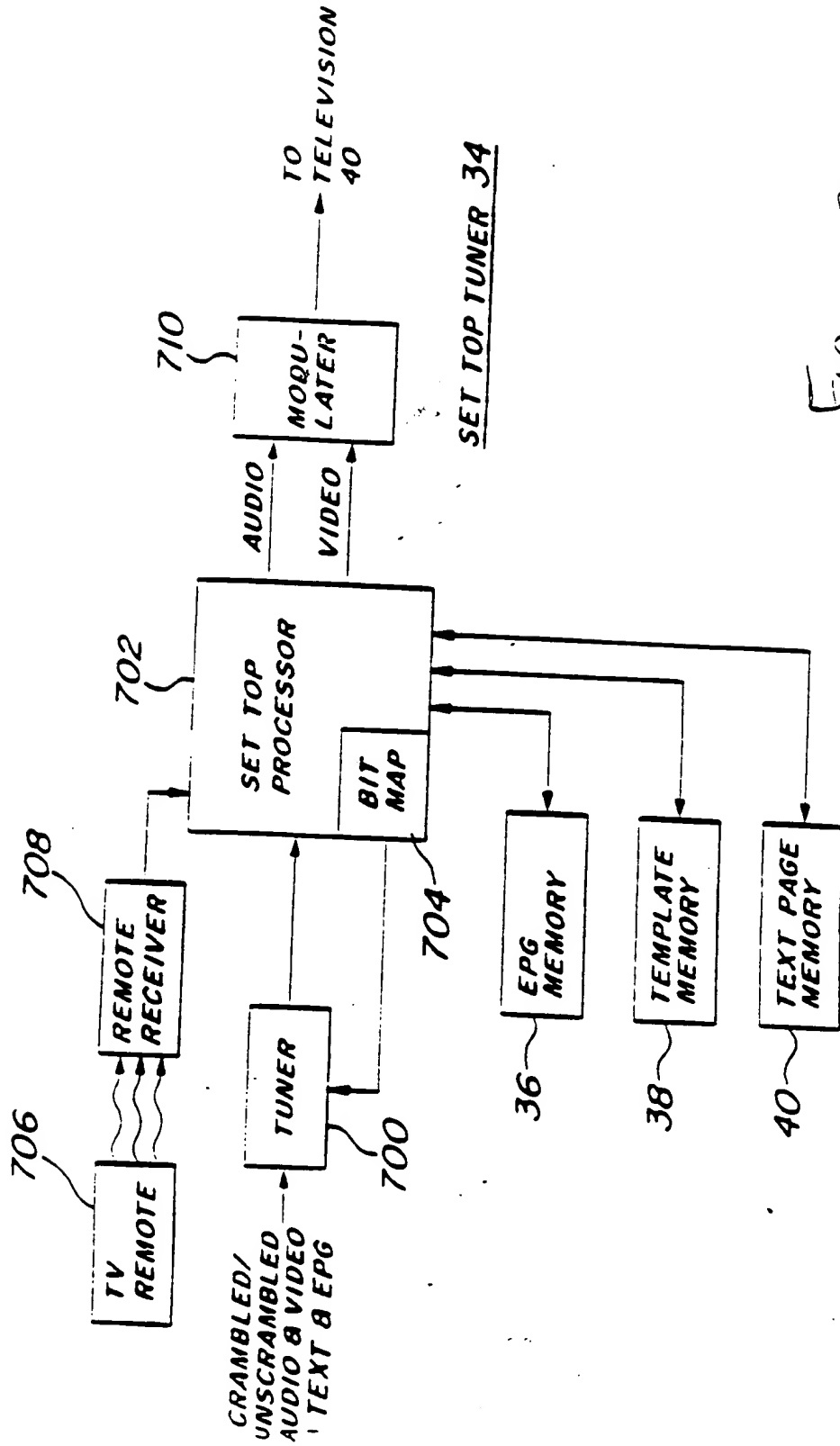


Figure 34



Process for automatically creating multiple profiles and  
automatically identifying currently active profiles

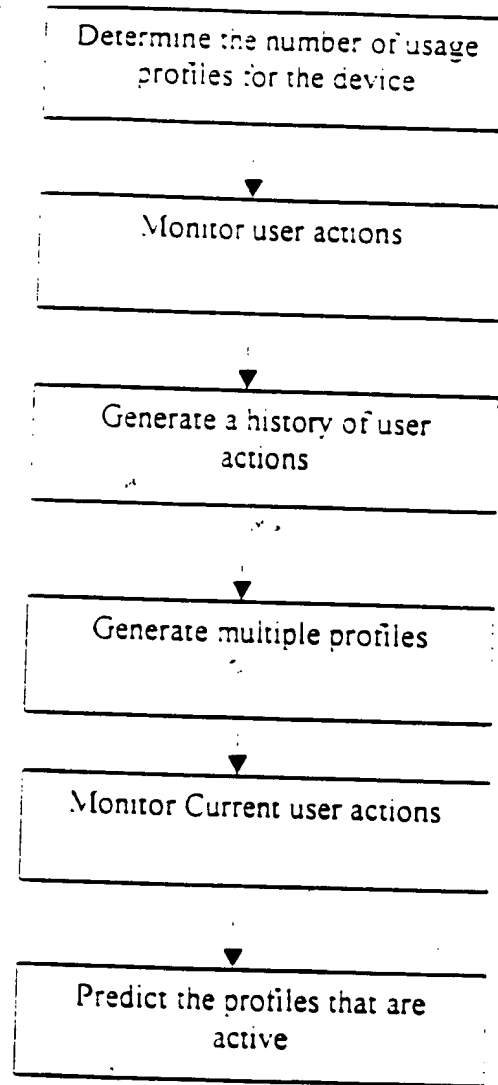


Figure 35

004E80 82745500

Process for generating multiple profiles

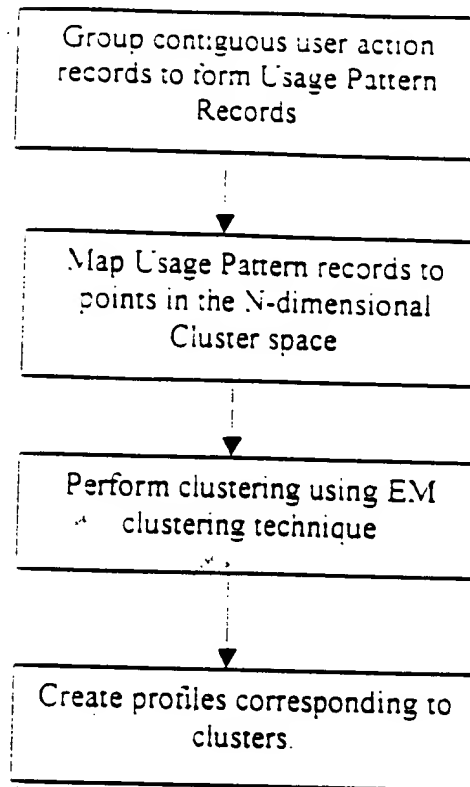


Figure 36

004E80 824E860 0952478 083400

Action
StartTime
EndTime
Parameters

B) Format of user action record

Channel Change.
38720100
38720110
NBC

B) Example of user action record

Number of Action records
Action record 1
Action record 2

•

•

Action record N
-----------------

C) Format of History database

Number of Action records
Action record 1
Action record 2

•

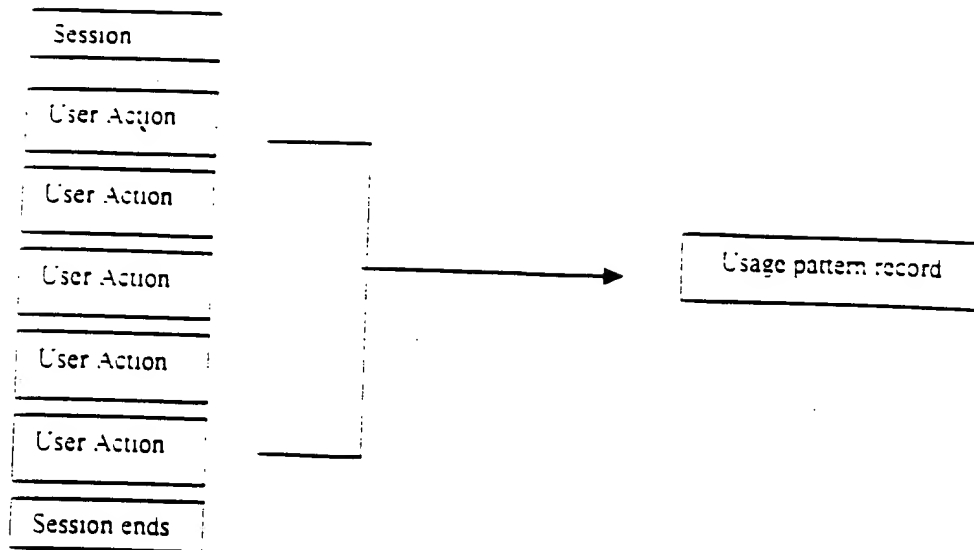
•

Action record N
-----------------

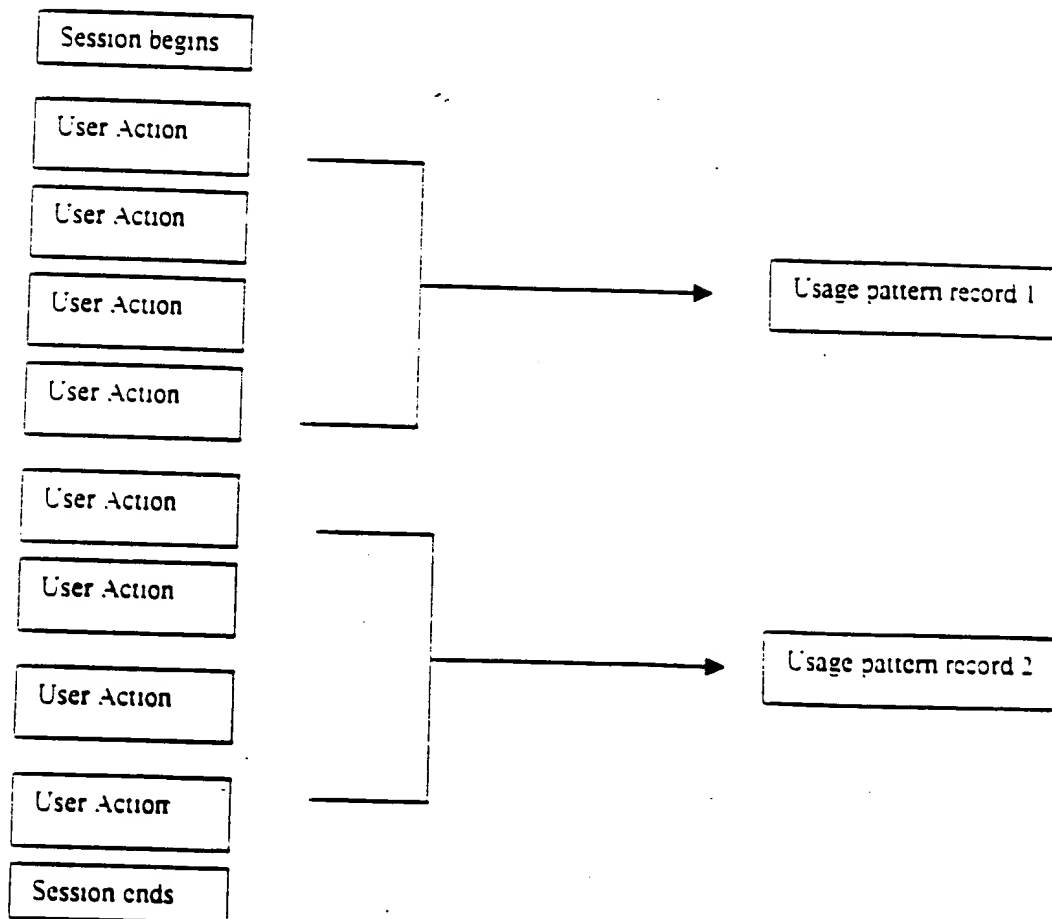
D) Format of Usage pattern record

001.E50 B2745550

Figure 37



A) One method for creating usage pattern

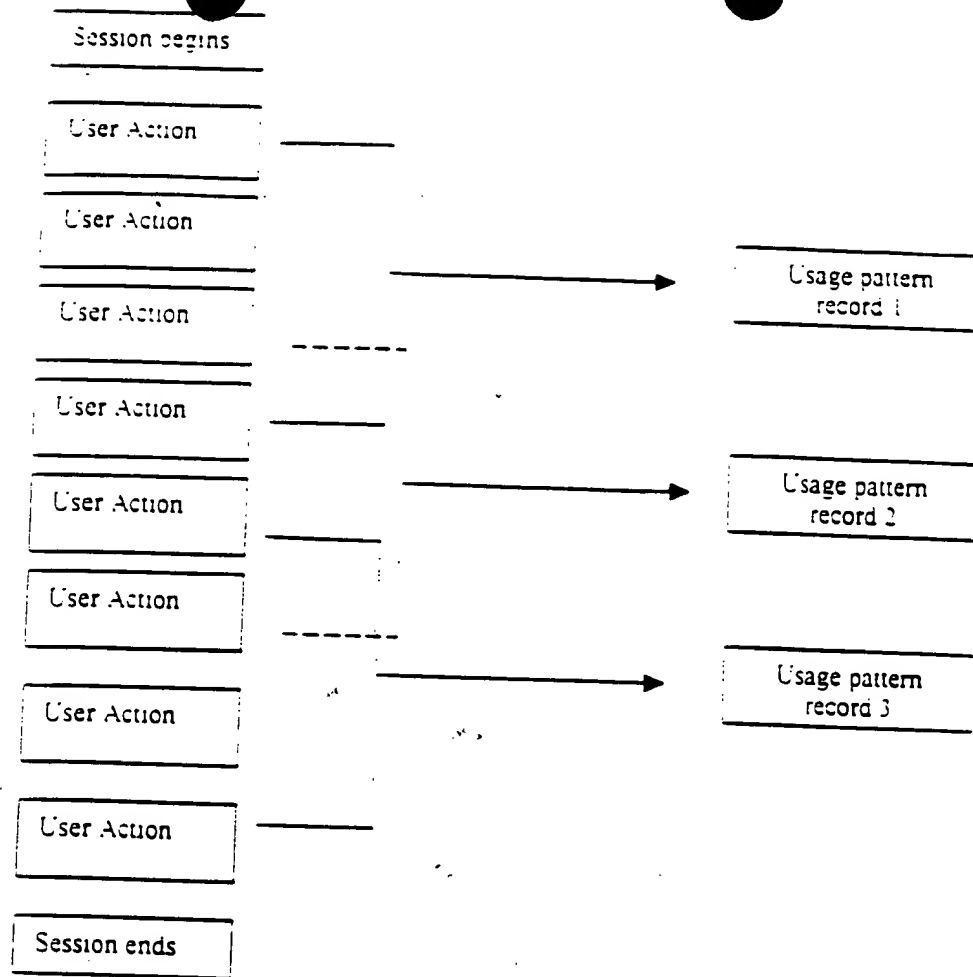


B) One method for creating usage pattern

Figure 38

004E30 82725950

001E80 82725960



One method for creating usage pattern record

Figure 39

Process for Predicting currentiv active profiles

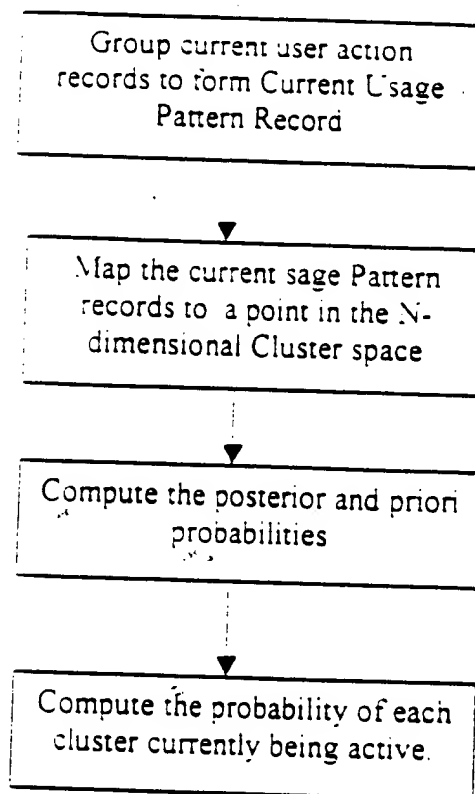


Figure 40

007E30 82725960

# Profile Creation using Generated Clusters

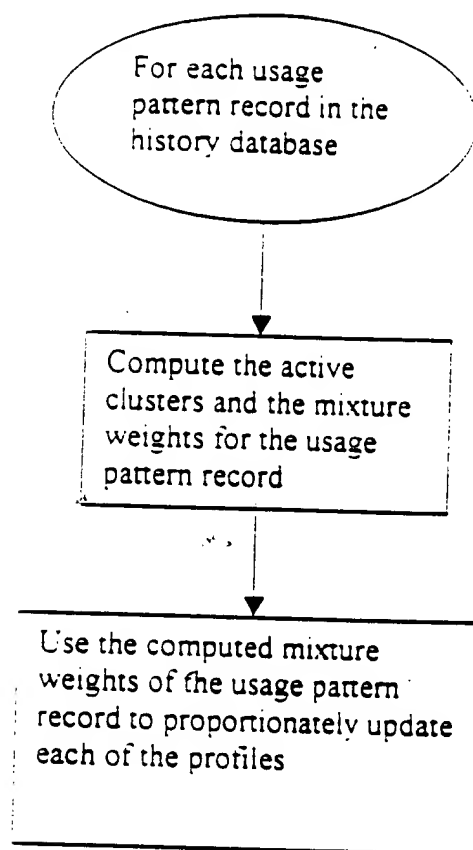


Figure 41

001E90-8425960

Targeted Electronic Content Distribution without compromising privacy of users

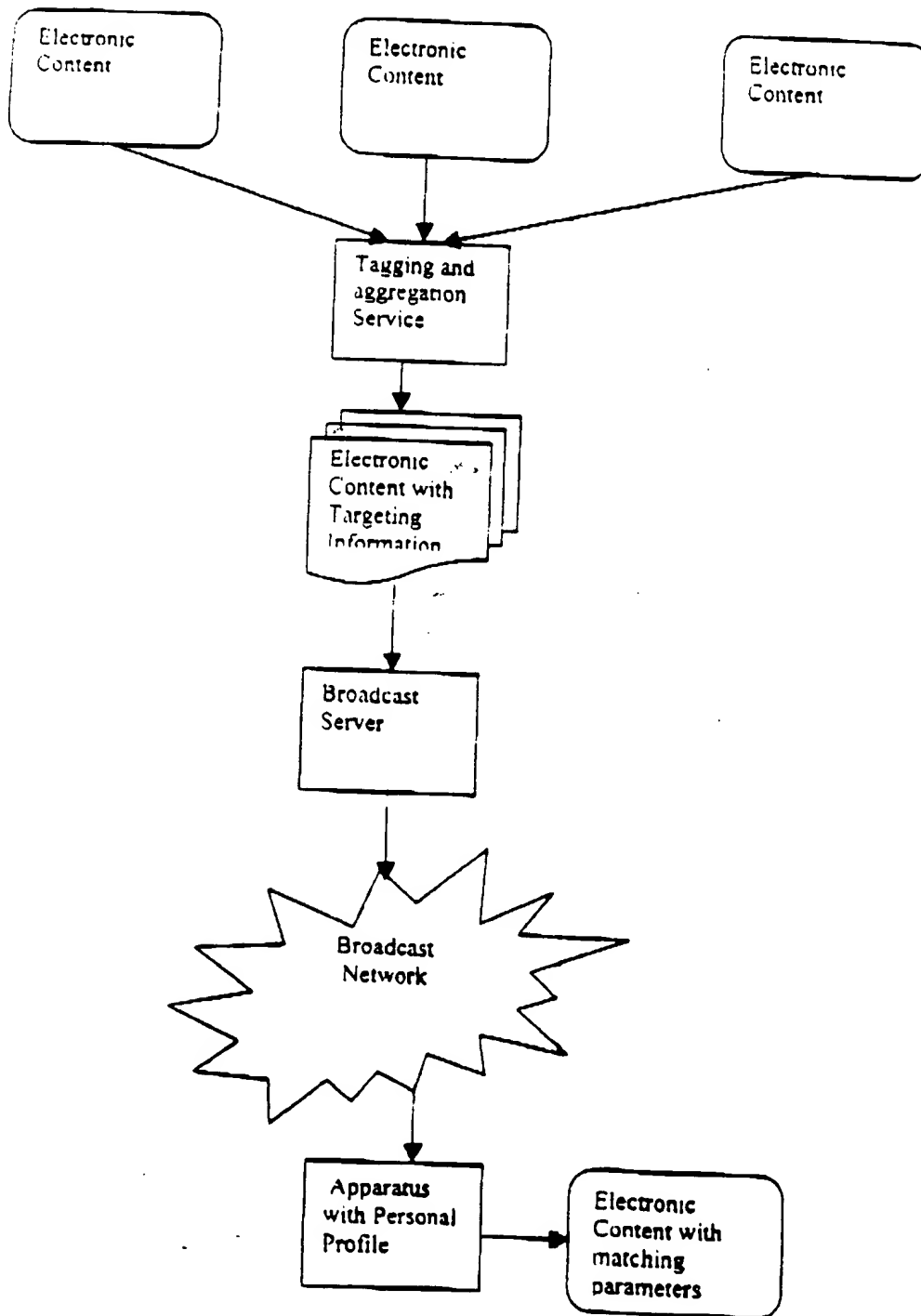
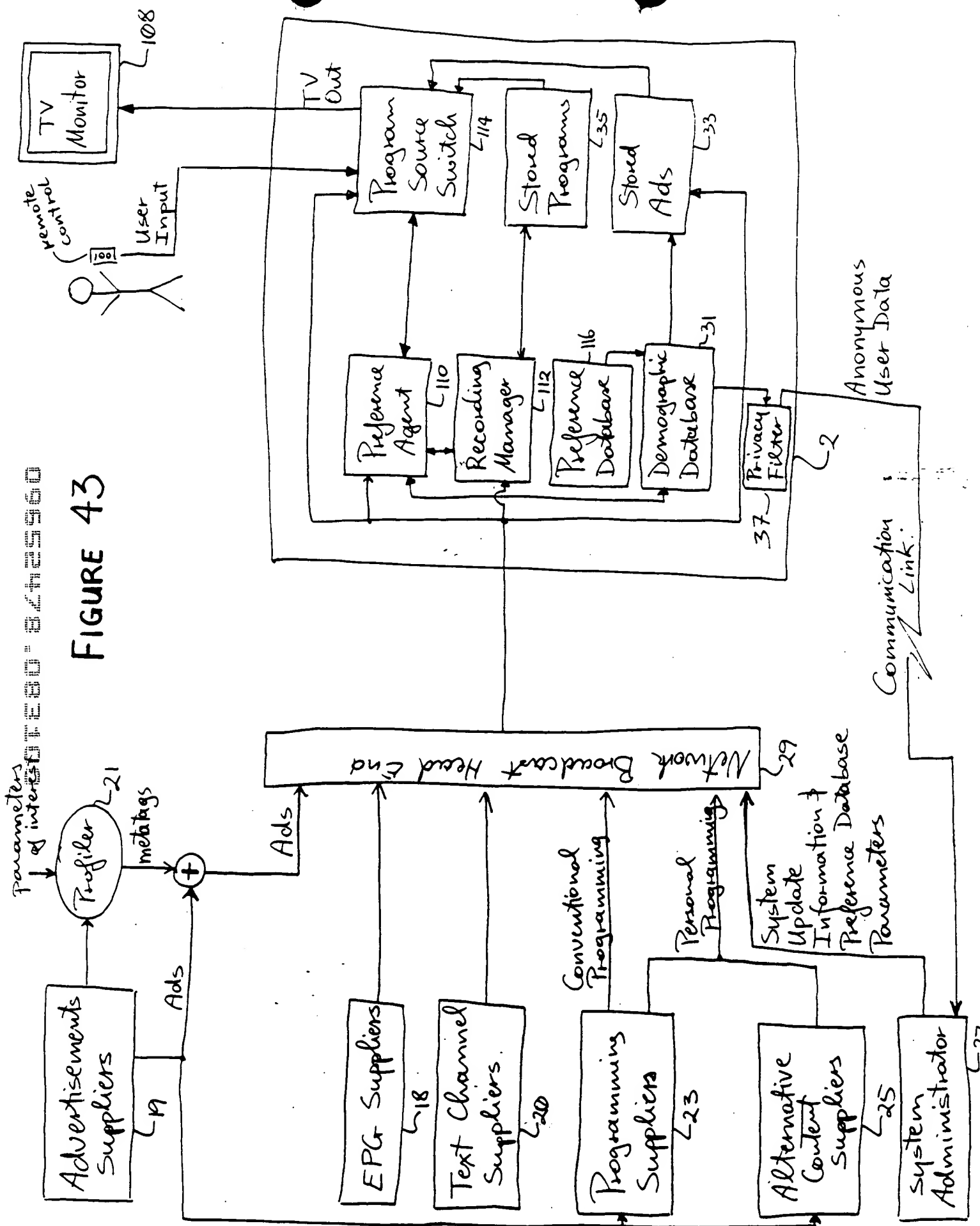


FIGURE 42



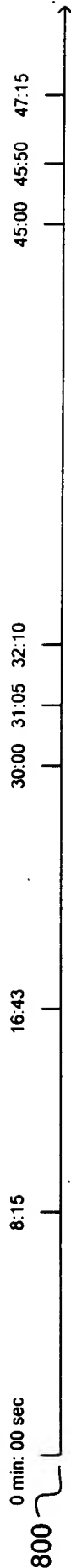
FIGURE 43



# Conventional Linear Programming

Scene 1	Scene 2	Scene 3	Ad 1	Ad 2	Scene 4	Ad 3	Ad 4
---------	---------	---------	------	------	---------	------	------

## Timeline



# Customized Linear Programming

Scene 1	Scene 2	Scene 3	Ad 1	Ad 2	Scene 4	Ad 3	Ad 4
	Scene 2a	Scene 3a	Ad 1a	Ad 2a		Ad 3a	Ad 4a
		Scene 3b	Ad 1b	Ad 2b			Ad 4b
			Ad 1c	Ad 2c			

# Customized Linear Programming with Variable Scheduling

Scene 1	Scene 2	Scene 3	Ad 1	Ad 2	Scene 4	Ad 3	Ad 4
	Scene 2a	Scene 3a	Ad 1a	Ad 2a		Ad 3a	Ad 4a
		Scene 3b	Ad 1b	Ad 2b			Ad 4b
			Ad 1c	Ad 2c			

Figure 44.